BEFORE THE AMERICAN ARBITRATION ASSOCIATION
(Hereafter "AAA")
The North American Court of Arbitration for Sport/AAA Panel

United States Anti-Doping Agency (hereafter "USADA")	)	
Claimant	)	
and	)	
	)	Arbitration Award
Floyd Landis (hereafter the "Athlete")	)	Case No: 30 190 00847 06
Respondent	)	

APPEARANCES

Claimant: Richard Young, Esq.; Matthew Barnett, Esq.; Dan Dunn, Esq., Travis Tygart, Esq., Jennifer Sloan Esq.

Respondent: Maurice Suh, Esq. Howard Jacobs, Esq.; Daniel Weiss, Esq. & Paul Scott

UCI: No appearances

USA Cycling, Inc.: No appearances

WADA: No appearances

WE, THE UNDERSIGNED ARBITRATORS, having been designated by the above named parties and having been duly sworn and having duly heard the proofs and allegations of the parties FIND AND AWARD AS FOLLOWS:

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<u>Introduction</u>

1. Like the Montgomery & Gaines[1] cases this proceeding was one in which the parties were unable to reach agreements which would have expedited this matter.

2. In the charge letter of 19 September 2006 USADA states that:

> ***… USADA charges you with a doping violation for testing positive for exogenous testosterone or its precursors[2] as conclusively established by Carbon Isotope Ratio ("CIR"[3]) analysis and further corroborated by an elevated testosterone to epitestosterone ("T/E") ratio in this sample, which could only be compatible with exogenous administration …***

<u>The Parties</u>

3. The Claimant, USADA is the independent anti-doping agency in the United States, responsible for the managing of the anti-doping testing and adjudication processes for the member constituents such as USA cycling.

4. The Respondent, Floyd Landis is an elite cyclist with many cycling accomplishments during his career. In 2006, he was first overall in the Tour of Georgia, as well as Paris Nice, and Tour of California. The Athlete holds a US license and in signing the license the Athlete agrees that the sole jurisdiction for resolving any dispute that arises shall be in the courts of domicile of the UCI. The UCI Cycling Regulations provide that adjudication of matters shall be handled by the national federation of the athlete involved.

5. UCI is the International Cycling Union and is the International Federation {"IF"} responsible for the organisation of the sport of cycling worldwide. It is an association of national cycling federations. The purpose of the UCI is to direct, develop, regulate, control and discipline all forms of cycling. Under UCI Cycling Regulations ("UCI Rules") Chapter IX, it is the responsibility of USA Cycling to conduct results management and hearings regarding doping allegations. As explained more fully below, USA Cycling through contract has delegated its obligation under the UCI Rules, Chapter IX, to USADA.

6. USA Cycling is the official cycling organization for road racing, mountain racing, track, cyclo-cross and BMX cycling in the United States and is responsible for identifying, training and selecting cyclists to represent the United States in international competitions. USA Cycling is a member of UCI.

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[1] *USADA v/ Montgomery* CAS 2004/O/645; *USADA v/ Gaines* CAS 2004/O/649.

[2] Some examples of precursors are: androstanediol, androstenedione, DHEA and testosterone esters. Such precursors metabolize in the body into testosterone. These precursors are found on the Prohibited List.

[3] CIR analysis is the test performed using Isotope Ratio Mass Spectrometry ("IRMS") instrument. The terminology is frequently used interchangeably. It is also described on occasion as the test used for "synthetic testosterone".

7. WADA is the World Anti-Doping Agency and is an international organization that promotes, coordinates, and monitors the anti-doping programs in sports. It is responsible for the worldwide harmonization and implementation of national and international anti-doping programs in sport. WADA is a Swiss private law foundation with its seat in Lausanne, Switzerland and its headquarters in Montreal, Canada.

Jurisdiction

8. This Panel has jurisdiction over this doping dispute pursuant to the UCI Rules. The UCI Rules state that UCI has accepted the World Anti-Doping Code and that the Code is incorporated into the UCI's Anti-Doping Rules.

9. The UCI Rules provide that the International Standards adopted by WADA are equally controlling under UCI rules:

> ***Compliance with the International Standards (as opposed to other alternative standards, practice or procedure) shall be sufficient to conclude that the procedures addressed by the International Standards were performed properly.***

10. The UCI Rules in Chapter IX provide general guidance for the conduct of disciplinary hearings before the license-holder's National Federation, which in this case is USADA acting on behalf of USA Cycling as required by the bylaws of the USOC. Regarding athletes, the USOC Policies provide:

> ***…By virtue of their membership in an NGB or participation in a competition organized or sanctioned by an NGB, Participants agree to be bound by the USOC National Anti-Doping Policies and the USADA Protocol.***[4]

11. In compliance with the Act, the USADA Protocol, Article 10 (b), provides that hearings regarding doping disputes *"will take place in the United States before the American Arbitration Association ('AAA') using the supplementary Procedures."*[5]

12. The particulars of the hearing are left to the regulations of the license Holder's National Federation. The regulation governing the particulars of the hearing is therefore the USADA Protocol. The Respondent agreed to be bound by the USADA Protocol by virtue of his UCI license application.

> ***I agree that the sole jurisdiction for resolving disputes that may arise shall be in the courts of domicile of the UCI.***

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[4] National Anti-Doping Policies, ¶12.

[5] The supplementary procedures refer to the American Arbitration Association Supplementary Procedures for the Arbitration of Olympic Sport Doping Disputes, as approved by the USOC's Athletes' Advisory and NGB Councils.

The Procedural Background

13. On 19 September 2006 USADA issued the charging letter (portions of which were quoted above) in which it seeks an order of this Panel that a first doping violation has occurred pursuant to the USADA Protocol, the UCI Anti-Doping Rules, and the United States Olympic Committee (the "USOC") Anti-Doping Policies. It seeks the following sanctions by way of orders from this Panel:

- ***A two (2) year period of ineligibility as described by the WADA Code, beginning on the day you accept this sanction, fail to contest this sanction, or the date of the hearing decision in this matter; and***
- ***Disqualification of all competitive results obtained on or subsequent to July 20, 2006 the date your sample was collected, including forfeiture of any medals, points and prizes; and,***
- ***Ineligibility for a period of two (2) years beginning on the day you accept this sanction, fail to contest this sanction or the date of the hearing decision in this matter, from participating or coaching in U.S. Olympic, Pan American Games or Paralympics Games Trials, being a member of any U.S. Olympic, Pan American Games or Paralympics Team and having access to the training facilities of the USOC including, but not limited to benefits, grants, awards or employment as set forth in section 6 of the USOC Anti-Doping Policies and further defined by Annex C therein.***

14. The party appointed arbitrators were named by the parties by 12 October 2006. They were unable to agree as to the appointment of a chairman. The AAA appointed the chairman in accordance with its default procedure on 27 November 2007. The Panel of Arbitrators was not confirmed by the AAA until 4 January 2007. After that date there were still lingering issues surrounding the application of the laws of the State of California to the arbitrators and the necessary disclosures such that the Panel was not finally confirmed until 20 February 2007.

15. The Panel held an initial exchange of information telephone conference call[6] with the parties counsel on 9 January 2007. The Panel issued directions to the parties on 10 January 2007 to confer with each other regarding matters discussed during that conference call and to file a position paper detailing the issues that remained following the parties consultation. USADA filed its *Position Paper Re Preliminary Matters* on 24 January 2007.

16. On 22 January 2007 the Respondent filed with the Panel a letter in which it set out its *Second Request for Production of Documents*.

17. The Panel proceeded on the first confirmation date and by its conference call of

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[6] A dispute had arisen concerning the confirmation of the Panel because of the addition of a new counsel for the Athlete which did not come to the Panel's attention until after 5 January 2007. Thus, the call was not a pre-hearing conference call. The Panel was finally confirmed on 20 February 2007.

29 January 2007 raised the issue with counsel as to the fact that the Athlete remained free to compete although the fact of the matter was that the Athlete had not competed and had hip replacement surgery. The Panel wanted the matter to be concluded within the time frame of the applicable rules that meant that a hearing must be held in March of 2007. The Athlete's lawyers were concerned that this would be insufficient time to prepare the case. A compromise was struck with the Athlete. On 31 January 2007 the Panel received the following written undertaking, dated 30 January 2007, from the lawyers for the Athlete.

> ***Mr. Landis recognizes the concerns expressed by the panel surrounding his racing status, especially with respect to the 2007 Tour de France. He hereby agrees to not participate in any international cycling race or any domestic professional cycling race event prior to the conclusion of the proceedings in the above-captioned matter. This self-imposed suspension from racing is made in order to obviate any concerns that may arise from his request to set the trial date so as to allow adequate preparation for trial. Further, Mr. Landis recognizes that this request for additional time is made on his part and not jointly with the United States Anti-Doping Agency ("USADA").***
>
> ***Mr. Landis makes these concessions in order to allow the panel the latitude to grant him the time necessary to adequately prepare his defense in light of the briefing schedule currently held in place.***

18. On 20 September 2006 the Agence Française de Lutte Contre le Dopage (the "AFLD") advised the Athlete that it intended to convene an administrative hearing[7] arising from the Lab's findings after Stage 17 of the Tour de France. The hearing scheduled for 8 February 2007 was adjourned pending the outcome of these proceedings on the Athlete's promise not to compete in France.

<u>Beginning of the Arbitration Procedure and Constitution of the Panel of Arbitrators</u>

19. By letter of 12 October 2006 USADA nominated Professor Richard H. McLaren, Barrister of London, Ontario Canada as its party appointed arbitrator. In reply the Athlete nominated Christopher L. Campbell, Esq. as his party appointed arbitrator. The two arbitrators attempted to agree upon who should be the third arbitrator without success. The default procedure of the AAA was invoked and they eventually confirmed Patrice Brunet, Esq. as the third Arbitrator.

20. At the outset of this proceeding, the AAA applied California law as the applicable law for the arbitration hearing. Under the California Code of Civil Procedure, arbitrators are required to provide certain disclosure as a condition of serving on an arbitration panel. California law imposes a number of ethical and procedural requirements on the arbitration process, including the

[7] A hearing is provided for in Article 3634-2 *et seq.* of the French Public Health Code.

investigation and disclosure of potential conflicts and the opportunity for the parties to challenge proposed members of the arbitration panel. This caused a considerable delay, specifically after Mr. Landis' sudden change in lead counsel in December of 2006, as it required that the nominated arbitrators provide further disclosure to ensure there was no conflict with new lead counsel Maurice Suh.

21. Accordingly it was not until 20 February 2007 that the Arbitration Panel was finally confirmed to all parties.

USADA Charge:

22. On 19 September 2006, USADA charged the Athlete with,

> ***[…] a doping violation for testing positive for exogenous testosterone or its precursors as conclusively established by Carbon Isotope Ratio ("CIR") analysis and further corroborated by an elevated testosterone to epitestosterone ("T/E") ratio in this sample, which could only be compatible with exogenous administration. Under the USADA Protocol and the UCI Anti-Doping Rules, both of which incorporate the WADA Code, doping is strictly forbidden and is an offense.***

<u>The Initial Procedural Stages and Orders of the Panel</u>

23. On 2 February 2007 the Panel issued Procedural Order Number One. The purpose of which was to further plan the course of the proceedings. Included in this Order was the parties' agreement to be bound by the rules of the Accelerated Exchange Program of the AAA; the means and manner of communication between the parties and the Panel; the dates of the interlocutory hearing and hearing on the merits; the official language of the proceedings; the Panel's direction to the parties to provide their submissions regarding the further testing of the samples and production of documents and deadlines within which they were to do so; details regarding the transcript of the proceedings and finally the publicity of the hearing. The Panel concluded that a public hearing would also include a live television broadcast of the proceedings on the terms defined and controlled by the Panel. The Parties were further ordered not "*to engage in any public comment on the hearing or the arbitration procedure,*" and to keep all documents disclosed through the process of discovery confidential.

24. Procedural Order No. 2 was issued on 15 March 2007. The purpose was again to further plan the course of the proceedings and to supplement Procedural Order No. 1. The Order dealt in particular with the Production of Documents, the appointment and role of an independent Panel Expert and other administrative matters. The Order further elaborated upon the confidentiality of the arbitration and provided that the parties' briefs, transcript of the proceedings and procedural orders were not to become public sooner than the first day of hearings in the arbitration. Lastly, the parties were ordered to file a draft

arrangement regarding the organization of the media and live television during the hearing.

25. In addition to and as part of Procedural Order No. 2, on 23 March, 2007 the Panel made a further Ruling regarding the Respondent's second request for the production of documents. Accordingly, USADA was ordered to produce certain documents and the use of a Panel expert was confirmed as a matter arising out of the discovery hearings of 22 & 23 February 2007.

26. Procedural Order No. 3 was issued by the Panel on 4 April 2007. This Order was concerned solely with issues surrounding the media. The USOC agreed to provide a media consultant who would report to the Panel and take directions only from the Panel regarding the broadcasting of the arbitration proceeding and the general conduct of the media during the course of the arbitration hearings. The Order provided direction regarding media equipment and personnel and held that two television cameras and one still camera would be permitted in the hearing room. The Order also gave instructions regarding news media pooling, television coverage and the public display of exhibits. Parties were ordered to identify any exhibit or other documents that it considered to be confidential prior to the hearing. These documents would not be displayed during the arbitration to the media or members of the general public without the prior authorization of the Panel.

27. On 24 April 2007, the Panel issued Procedural Order No. 4 concerning witness testimony. The parties were ordered to specify whether witnesses would testify in person, by video conference or by teleconference. The order also specified that parties were to be responsible to make whatever arrangements necessary for those witnesses.

28. A fifth and final procedural order was issued by the Panel on 10 May 2007. This Order addressed additional technical and logistical issues in relation to the arbitration hearing. The Order specified the dates, location and timing of the hearing; the order in which the hearing would proceed, provided final details regarding the court reporter, the interpreter and lastly, ordered that a final pre-arbitration conference was to be held on 13 May 2007.

The Discovery Hearings on 22 & 23 February 2007

29. On 22 February 2007 a Discovery Hearing was held at the American Arbitration Association offices in Los Angeles, California. Additional time for this hearing was required and consequently the parties continued the hearing by telephone conference call on 23 February 2007. There were several purposes for this initial hearing. Firstly, to discuss the Claimant's proposal to test the Respondent's additional B samples; to discuss outstanding issues surrounding discovery; and the production of LNDD's laboratory documentation.

30. In attendance were counsel for the parties and the Athlete. It was during these

proceedings that the notion of having a Panel scientific expert who would supervise the extraction of the electronic data files for use in re-running the results on the IsoPrime machine was brought up. The request of the Respondent for depositions in this case was also addressed at this time.

a. Additional Sample Testing

31. On 27 December 2006, the Applicant notified the Respondent of its intention to perform further analysis of the samples the Athlete had provided after seven stages of the Tour other than Stage 17. In answer to this notification the Respondent sought to prevent further analysis of the Respondent's remaining B samples from the Tour.

32. Written arguments in relation to this matter were received by the Panel on 5 February 2007 from the Respondent, 9 February from the Claimant and a Reply was received from the Respondent on 13 February 2007. The oral arguments were presented to the Panel on 22 & 23 February 2007.

33. In response to the Respondent's numerous allegations regarding the flawed testing methodology at the LNDD, the Claimant proposed to test the Respondent's remaining "B" samples to use as corroborative evidence in these hearings. The Respondent's position in relation to this matter was that the anti-doping rules prevented the Lab from testing these samples as there were no accompanying "A" samples remaining and as such the "B" samples could not be used as proof of a positive test. The Claimant argued however, that as a result of its contract with the Respondent, the "B" samples were now the property of UCI and they could do as they pleased with the Sample. Furthermore, they would not be using the results of these tests to charge the Athlete with an anti-doping rule violation, but rather the results would serve as corroborative evidence in response to the Respondent's arguments that the testing methodologies at the Lab were flawed.

34. The Respondent also submitted that the re-testing would not be blind and this would significantly impede the process and would not allow for an unbiased result. The Claimant in response however pointed out that the "B" sample testing is rarely ever completely blind and the Athlete and/or his representative would be present during this re-testing to ensure that the proper procedure and protocol was followed. Accordingly, a compromise was reached between the parties and it was decided that additional samples other than those of the Athlete would be added to the "B" samples to create a blinded analysis.

35. By majority decision, an Interlocutory Award was issued on 17 March 2007. The Award disposed of any impediments said to exist by the Respondent in respect to testing the "B" samples.

b. Discovery regarding Laboratory Documentation

36. During these initial stages of the hearing, there was disagreement between the parties as to what constituted the laboratory documentation package for discovery and to what documents the Respondent was entitled in terms of preparing his defense.

37. The Respondent submitted that there was a blanket refusal on the part of LNDD to provide any documents in relation to the testing of the Respondent's sample.

38. Particularly the Respondent was requesting discovery on 6 categories of items:

- **i) Electronic Data Files;**
- **ii) Reference Population Data for the IRMS standard;**
- **iii) Documents establishing the measurement of uncertainty for both testosterone and epitestosterone;**
- **iv) Documents relating to the determination, validation and approval of the positivity criteria for IRMS;**
- **v) The complete Standard Operating Procedures relating to the operation of the GC/IRMS and GC/MS; and**
- **vi) The maintenance logs for the IRMS and GC/MS instruments.**

39. The Claimant submitted that the International Standard for Laboratories prevented the Arbitrators from making a ruling that would allow the Respondent to have access to certain documents they were requesting. In particular, USADA referred the Panel to Rule 7.1 which reads,

> ***7.1 Laboratory Documentation Package***
>
> ***In support of any Adverse Analytical Finding the Laboratory is required to provide the Laboratory Documentation Package described in detail in the Technical Document on Laboratory Documentation Packages.***
>
> ***The Laboratory is not required to provide any documentation not specifically included in the Laboratory Documentation Package. Therefore, the Laboratory is not required to support an Adverse Analytical Finding by producing, either to the Testing Authority or in response to discovery requests related to the hearing, standard operating procedures, general quality management documents (e.g., ISO compliance documents) or any other documents not specifically required by Technical Document on Laboratory Documentation Packages. References in the International Standard for Laboratories to ISO requirements are for general quality control purposes only and have no applicability to any adjudication of any specific Adverse Analytical Finding.***

40. The Claimant then referred the Panel to WADA Technical Document

2003LDOC, which gives a description of what the Laboratory is required to provide to the Athlete and what the Laboratory is not. The Claimant's argument is therefore that the Laboratory cannot be ordered to produce anything beyond the scope provided for in the Technical Documents. Further it was maintained that because the Laboratory is a witness, as opposed to a party, the Panel cannot order the Laboratory to do anything that it's not required to do under the Code.

41. The Respondent's position was that assessing 7.1 in the context of the rules, demonstrates that there was never an intention that the laboratory documentation package provision of 7.1 would prohibit the Panel from ever ordering any other discovery. Furthermore this entirely prohibitive interpretation of rule 7.1 in this case would be directly contrary to Article 8c of USADA's own protocol and Rule 23 of the Supplementary Procedures, which apply in this case

42. Article 8c of USADA's protocol states,

> ***[….] The laboratory shall not be required to produce any documentation in addition to Annexes C and D unless ordered to do so by an arbitrator during adjudication, in which case it shall be produced at the athlete's expense unless ordered otherwise by an arbitrator.***

43. The Respondent further pointed out that likewise, the Supplementary Procedures, Rule 23, allow that:

> ***An exchange of information may occur at the request of any party or at the discretion of the arbitrator. Consistent with the expedited nature of arbitration, the arbitrator may direct the production of documents and other information and the identification of any witnesses to be called.***

44. The position of the Respondent is therefore that 7.1 of the International Standards for Laboratories was never intended to be read to prohibit the Panel from ever ordering any other discovery and that it simply made no sense to say that, in any case, there would never be any other documentation required to be produced. The Respondent further argued that this position is entirely inconsistent with USADA's own statements that in the past, when specific items were brought to their attention, they have asked the laboratory to produce those documents.

45. The Applicant stated that the Lab was willing to let the Respondent's expert come to the lab and look at all the data on this sample that he wants electronically, but the Laboratory has a policy of not allowing people to walk away with additional data from the laboratory.

46. The position of the Applicant was that the Lab could allow the Respondent to request print-outs of certain documents for their review, but that those

documents were not to leave the Laboratory. The purpose of the policy of not letting raw data out of the Lab, as stated by the Claimant is to prevent others from manipulating that data and that furthermore there is a significant burden in accommodating these requests.

47. Both parties elaborated during the hearings on their respective positions and reasoning for needing the documentation and for denying the request.

48. At this time it was also determined that the Claimant would provide information to the Respondent and the Panel by 2 March 2007 with respect to the availability of longitudinal studies and steroid profile analysis from other labs on the Respondent's previous tests to use as corroborative evidence to the elevated T/E ratio violation.

49. It was also agreed that, subject to any threshold objections, in terms of requesting documentation that the Respondent would ask specific questions regarding documentation and that if the response from the lab was that they don't have that particular document, then such documents would not be permitted to be used during the arbitration.

50. There was great debate in terms of the Respondent's request for provision of the documentation relating to the ISO accreditation of the LNDD. The Claimant states that the ISL documentation could not be any clearer that laboratories do not have to turn over their Standard Operating Procedure, that the LNDD has already turned over the most relevant ones and they should not be required to do anymore.

51. During this hearing, the Claimant agreed to provide the Respondent with all calibration data for GC/MS and IRMS equipment used by LNDD to test any sample provided by the Respondent including the calibration data for the negative tests.

52. These matters were addressed by the Panel in Procedural Order No. 1, issued on 15 March 2007 and Interlocutory Motions No. 2 and 3, both issued on 8 May 2007 and outlined below.

c. Re-processing of Electronic Data Files {EDF}

53. The Respondent requested the re-processing of the LNDD's electronic data files regarding the Athlete's sample on the newer software. They claimed that this re-processing would give them the ability to make a determination about whether or not the lab's original software came to the right conclusions about what the final test results were.

54. Electronic Data Files {EDFs} are the raw data files, in electronic form in relation to the results of the IRMS testing of the Respondent's Sample 995474.

55. **The parties agreed to the appointment of a neutral expert to supervise the re-processing. There was an additional problem with respect to the location where the re-processing was to take place. At the request of the Respondent, USADA inquired as to whether the UCLA Laboratory could perform the re-processing. The UCLA Laboratory was unavailable to perform the re-processing and it was eventually agreed that the re-processing would take place at the LNDD in the presence of all parties' experts.**

d. Panel Appointed Expert

56. **In a separate, but related matter to the request to re-process the electronic data files, it was agreed that to facilitate the discovery process and to obviate any possible battle of experts, the Panel was to appoint its own expert. The initial role of the Panel appointed expert was to run the re-processing of the electronic data files. The parties were directed in Procedural Order No. 2 to agree upon an independent expert for the Panel by 21 March 2007.**

57. **A telephone conference call in relation to this matter was held on 21 March 2007 and on 23 March 2007 the Panel and the parties received a submission from the representative for the Respondent recommending a forensic consulting firm as forensic computer expert and as expert for the purposes of IRMS analysis they submitted for consideration Dr. Wolfram Meier-Augenstein or Rodriguez Aguilera. The Respondent further reiterated its objection to the appointment of an expert who is an employee or director of a WADA accredited laboratory.**

58. **On 26 March 2006, by way of email from Maurice Suh, the parties informed the Panel that they had met and conferred with respect to the recommendation of a mutually acceptable expert to be retained by the Panel. The parties indicated they had agreed upon Rodrigo Aguilera, Ph.D. In this correspondence the parties also stated that the precise scope of the expert's role was unclear, and they requested an audience with the Panel to discuss the location of the re-testing of the electronic data files.**

59. **By way of email Matthew Barnett for USADA agreed to the parties' mutual agreement of an expert; however they were not requesting a further hearing regarding the location of the re-testing.**

60. **On 29 March 2007, the parties held a telephone conference call with the Panel and a subsequent call was held only between the parties. By letter to the Panel the parties indicated through Mr. Suh that they were in agreement that James Ehrlinger, Ph.D. should serve as the Panel's expert on matters related to carbon isotope ratio testing. Mr. Suh indicated however that it was their stronger wish that Dr. Meier-Augenstein play this role. In additional correspondence from counsel for the Claimant, it was submitted that the Panel should not retain an expert such as Kroll, as Kroll only has the knowledge to extract the electronic data, but would not be able to provide the Panel with any expertise regarding whether or not it is appropriate or possible to try and run data obtained through**

earlier software or later versions.

61. On 2 April 2007 the Respondent addressed the fact that the scope of the Panel expert's role may have expanded. It was requested that a conference call be held with the Panel to determine the exact role of the expert and whether the expert would be made available for questioning.

62. The Panel convened on its own to discuss the issues of a scientific expert for the Panel and informed the parties of same on 4 April 2007.

63. After extensive research the Panel recommended Dr. Francesco Botrè to the parties and counsel agreed, following an interview with Dr. Botrè and the Panel that he could be the Panel's expert after which he was confirmed in that role.

e. ***Depositions***

64. Furthermore, the Respondent indicated that deposition testimony in this case was required in order for them to precisely determine what documents they should be requesting and what issues they should be addressing.

65. The Respondent also asserted that the only way to properly determine the accuracy of the procedure used at LNDD to conduct the testing of the Respondent's sample was through witness testimony of the people who actually performed the tests and accordingly they should be allowed to depose these witnesses prior to trial

66. In Response, USADA claimed that the depositions were unnecessary as they would be making these individual witnesses available at trial for oral testimony. The Respondent further elaborated that under the arbitration agreement there is no power for the Panel to order depositions.

67. The question surrounding the ability to depose witnesses was resolved by way of the Panel's Interlocutory Award No. 1, issued 17 March 2007 and the Panel's Procedural Order No. 4 concerning witness testimony.

<u>The Motion Record</u>

68. Over the course of these proceedings numerous motions were filed on behalf of both parties, several of which were not addressed in the initial procedural orders discussed above or the interlocutory awards discussed below.

69. On 7 May 2007, the Respondent brought a Motion for an Order Requiring Affidavits Regarding Leaked Retest Results. The Respondent's belief was that someone at LNDD leaked the results of the re-testing to the French publication l'Equipe and accordingly they were requesting affidavits, under oath from the parties and from LNDD that they were not the source of the leak.

70. The Claimant provided no written response to this motion.

71. The Respondent's Motion was discussed during the administrative hearing on 13 May 2007 and on 24 May 2007, the parties were provided with the affidavit of Mr. de Ceaurriz stating that to the best of his knowledge the leak was not from the employees or staff of LNDD.

72. On 7 May 2007, the Respondent brought a renewed Motion for Continuance of Arbitration Date and a Motion for a Ruling and Immediate Order on the Second Request for Production of Documents. The issues in this motion were dealt with in Interlocutory Award No. 3 discussed below.

73. On 8 May 2007, the Respondent brought a Motion for the Return of his Remaining "A" and "B" sample urine from the 2006 Tour de France. In this motion the Respondent claimed that his experts were prevented from participating in key portions of the re-testing and the Panel should therefore order that the remaining samples be returned to the Respondent so that his urine can be tested at an uninterested and "truly independent" laboratory.

74. The Claimant responded on 11 May 2007 and argued that Rule 167 of the UCI rules makes clear that the Respondent has no rights to the samples because under that rule, once a sample is collected from the athlete under the anti-doping rules it "*shall become the property of UCI…*" Further, the Claimant stated that the Respondent failed to establish any basis on which the Panel has jurisdiction.

75. On 8 May 2007, the Claimant brought a Motion in Limine to Prevent the Admission of Evidence of the Respondent's Pre-existing Medical Conditions as a Defense. The Respondent replied on 11 May 2007 that it had no intention of litigating his case based on his pre-existing medical conditions, but that he reserves the right to present evidence concerning his condition at the hearing. The Respondent requested therefore that the Panel reserve ruling on USADA's motion until such time as they sought to introduce evidence related to this defense. This matter was settled during the Administrative hearing on 13 May 2007.

76. A further motion was filed on behalf of the Respondent on 8 May 2007. This motion consisted of two separate requests, firstly a Motion to Strike Selected pages of USADA's Pre-trial Hearing and Response Brief Based upon Violation of Procedural Order #2 and secondly, Motion in Limine to Exclude Evidence Set forth in Selected Pages of Pre-trial Hearing and Response Brief Based upon Violation of Procedural Order #2.

77. The Claimant filed its response to the Respondent's Motion on 11 May 2007. The Claimant argued that it had complied with the Order of the Panel regarding production of documents and produced "voluminous" documentation in this case and accordingly the Respondent's motions should be denied. This Motion was renewed by the Respondent on 13 May 2007, the day prior to the hearing.

78. On 8 May 2007, USADA filed a Motion in Limine to Exclude Evidence of Alleged Laboratory Errors Unrelated to Analysis of the Respondent's Samples.

79. The Respondent provided its response on 11 May 2007. The Respondent argued that USADA's grounds in support of its motion were "groundless and misleading" and accordingly the motion should be denied.

80. The Claimant filed a Motion to Compel Production of Documents from the Respondent on 9 May 2007. The Respondent filed its opposition to the Claimant's motion on 10 May 2007.

81. By way of letter to the Panel on 9 May 2007, the Claimant made a submission to the Panel regarding an allegation of a violation of the Panel's Orders regarding the leaking of documentation and information in this matter to the press. The Claimant requested the Panel's prompt consideration of this matter.

82. The Respondent provided a response by way of letter dated 10 May 2007 stating that the documentation that had been disclosed was not subject to the non-disclosure provision in the Panel's previous Orders.

83. On 17 May 2007, during the hearings, the Respondent brought a motion to strike the testimony or Greg LeMond. The Claimant responded on 19 May 2007. The motion was dismissed during the hearing and its contents will not be discussed at length, but are considered at a later point within this award.

84. Unless otherwise stated, all the outstanding motions are hereby dismissed for the reasons contained herein; or, for reasons of inapplicability as the hearing progressed; or, for reasons that they have become moot on the issuance of this award.

<u>Interlocutory Awards</u>

85. In response to some of the above motions, the Panel issued a total of 3 Interlocutory Awards.

86. The first Interlocutory Award was issued by way of majority decision on 17 March 2007. Dissenting in part and concurring in part was Arbitrator Chris Campbell. Mr. Campbell's dissent was also issued on 17 March 2007. This initial Award was in response to the Respondent's October 23, 2006 and January 22, 2007 request for documents. USADA provided written explanations regarding the Respondent's request on 7 February 2007 and the Respondent filed a Response Brief on 13 February 2007. The Response Brief also raised a new issue regarding depositions. Oral arguments on these issues were heard at the Discovery Hearings on 22 & 23 February. In conclusion the first Interlocutory Award dealt with two issues. The Testing of Additional Samples and the Respondent's Request for Deposition.

87. In its ruling the majority of the Panel agreed USADA could perform additional tests on the remaining "B" samples, but held that they could not result in an adverse analytical finding. The majority also ordered that any additional testing of the Respondent's Samples be carried out by USADA and that the Athlete have the same rights of attendance and participation as were extended to him at the time of confirmation analysis of the "B" sample. The majority rejected the Respondent's request for depositions

88. The second Interlocutory Award was issued by the Panel on 8 May 2007 with reasons to follow. This award was made by way of majority decision, dissenting was Arbitrator Chris Campbell.

89. The third and final Interlocutory Award was also issued on 8 May 2007, with reasons to follow. The purpose of this award was to deal with the Respondent's Motion for Continuance and Motion concerning the Second Request for Production of Documents. The motion concerning the second request was in furtherance to the materials provided by the parties prior to the discovery hearings of 22 and 23 February 2007 and the oral submissions of the parties during the discovery hearing.

90. Further materials on this subject were filed by the Respondent and the Applicant during the months of March and April. The subject matter of these submissions was dealt with in the previous Interlocutory Awards. However on 7 May 2007, the Respondent filed a renewed Motion for Continuance and a motion for Immediate Order on the Second Request for Production of Documents.

91. The Panel ruled that the last discovery issue should be resolved when LNDD provided to the Respondent the additional chromatograms for the previous Isotope Ratio Mass Spectrometry positives declared by LNDD and that the Respondent should advise the Panel if the documents were not provided within the required deadline.

92. The Respondent's renewed Motion for Continuance was in furtherance to its email to the Panel of 23 April 2007, wherein it requested a new hearing date be scheduled for no later than 4 weeks from the date by which they received specific data as outlined in the email. The motion was denied. The Respondent's renewed motion was based on 3 grounds. Firstly, the fact that the EDF removal and re-processing had not yet begun; secondly the fact that the Respondent had only received the retesting results in the form of summary pages, and lastly, the absence of a ruling on the lack of other discovery at issue. The Panel denied the Respondent's Motion for Continuance.

The Hearing on the Merits

a. Chronology of Events

93. The Respondent placed first in the 2006 Tour de France {"the Tour"} which took place between 1 July 2006 and 23 July 2006.

94. During that race the Athlete was required to produce several urine samples for anti-doping testing. In particular, a sample was collected from the Respondent at approximately 5:55 p.m. on 20 July 2006 at the Doping Control Station in Morzine Avoriaz following Stage 17 of the Tour. The Sample was labelled Urine Sample #995474. After the collection, the Respondent signed the doping control form indicating his assent to the doping control process and confirming that there were no irregularities during the process. The Sample was then transported by courier, helicopter, and private plane to Paris where it was received by LNDD at 9:35 p.m.

95. On 21 July 2006, the Respondent's "A" Sample underwent screening for substances from the WADA prohibited list including stimulants, diuretics, corticosteroids, EPO, and anabolic steroids. The anabolic steroid screen includes an estimate of the T/E ratio. The following day LNDD began the preparations of the T/E and IRMS confirmation tests for the "A" sample. On 25 July 2006, LNDD completed the "A" Sample confirmations and reported an AAF finding to UCI.

96. On 26 July 2006, USA Cycling was notified by UCI, with copies to WADA, USADA and Phonak that the Respondent's Sample had tested positive. On 27 July 2006 USADA notified the Respondent of same. In response to this information the Respondent requested confirmation using the "B" sample.

97. The "B" Sample analysis began at LNDD on 3 August 2006. On 5 August 2006 LNDD reported an AAF for the Respondent's "B" Sample to UCI. UCI then forwarded this information to USA Cycling, WADA, USADA, Phonak and the Respondent's legal representative.

98. On 7 August 2006, USADA then requested of UCI the full documentation package for the testing of the Respondent's Sample.

99. On 19 September 2006, USADA informed the Respondent that the Anti-Doping Review Board had met and confirmed there was sufficient evidence of a doping violation and recommended that the adjudication process proceed.

100. The hearing for this matter was held at the Pepperdine Law School Courtroom in Malibu, California and commenced on 14 May 2007 and concluded on 23 May 2007. The Respondent exercised his right under the USADA Protocol to have the hearing open to the public. The hearing was also recorded on video in its entirety and was available live on the Internet. At trial, the Respondent was

represented by Maurice Suh and Daniel Weiss of Gibson, Dunn & Crutcher LLP, and Howard Jacobs of the Law Offices of Howard L. Jacobs. The Claimant was represented by Richard Young and Matthew Barnett of Holme, Roberts and Owen LLP. Also present on behalf of USADA were Jennifer Sloan and Dan Dunn. The Panel's expert, Dr. Botrè was present throughout the hearing with the exception of a portion of the cross-examination of Mr. Joseph Papp where the Panel had ordered him not to attend. Present also during these hearings Andreas Zagklis was clerk of the court for the first five days of the hearing and Rosalie Brunel was the clerk for the remaining portion of the hearing. The following witnesses were called by USADA:

- **i. Cedrick H.L. Shackleton of the Children's Hospital Oakland Research Institute;**
- **ii. J. Thomas Brenna, Professor of Nutritional Sciences at Cornell University;**
- **iii. Cynthia Mongongu, LNDD Analytical Chemist;**
- **iv. Claire Frelat, LNDD Analytical Chemist;**
- **v. Greg LeMond, 3 time winner of Tour de France;**
- **vi. Christiane Ayotte, Director of the Montreal WADA Accredited Laboratory;**
- **vii. Joseph Papp; professional cyclist;**
- **viii. Wilhelm Schänzer, Ph.D., Director of the Institute of Biochemistry of the German Sports University Cologne;**
- **ix. Don H. Catlin, Professor Emeritus of Molecular and Medical Pharmacology and Founder and Former Director of the Olympic Analytical Laboratory at UCLA;**

The Respondent called the following witnesses:

- **i. Dr. Corinne Buisson, LNDD IRMS Supervisor;**
- **ii. Dr. Bruce Goldberger, University of Florida, Department of Pathology, Immunology and Laboratory Medicine and Department of Psychiatry;**
- **iii. Floyd Landis, professional cyclist, the Respondent;**
- **iv. Wolfram Meier-Augenstein, senior lecturer in Environmental Forensics at Queen's University in Belfast, Ireland;**
- **v. Dr. John K. Amory, M.D., Professor at the University of Washington;**
- **vi. Simon Davis, Technical Director of Mass Spec Solutions;**

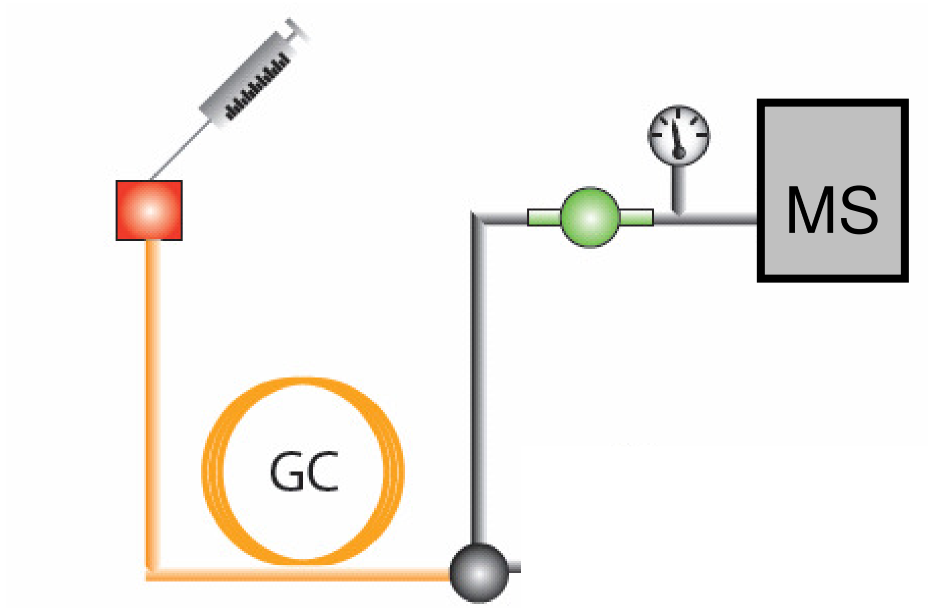
101. Testosterone is a naturally produced steroid and is included in WADA's list of prohibited substances. For anti-doping purposes there is a desire to verify whether the testosterone is from the "body" or from the "bottle". Therefore, an analytical process is necessary to distinguish between the endogenous and the synthetic origin of a naturally produced steroid like testosterone and its precursors. The gas chromatographer {GC} is coupled to different instruments to assist in the process of distinguishing endogenous and exogenous testosterone. How each of the different instruments operate and the chromatograms produced

is set out under separate headings below.

b. The Gas Chromatographer/Mass Spectrometer {GC/MS}

102. A gas-chromatographer may be attached to a mass spectrometer {MS} or an isotope ratio mass spectrometer {IRMS} in analytical chemistry bench work involving doping control activities within a chemistry lab. The GC also may be attached to other instruments in a lab but they are of no concern here in dealing with this particular doping control matter.

103. A schematic diagram of the GC instrument may look something like the following. This particular diagram shows the GC ending with a Mass Spectrometer {MS}. The GC may also end with a nitrogen-phosphorous {NPD} or a Flame Ionization Detector {FID}.



104. The testimony of Dr. Simon Davis explained the GC/MS process in the context of doping control analytical chemistry. The GC includes, among other components, the injector for the loading and vaporization of the sample into the instrument. The GC has a chromatographic column. It is a thin hollow wire several meters long and is physico-chemically coated on the internal surface thereby permitting separation of the individual components of the sample. An aliquot of the Athlete's "A" sample extract is injected into the GC inlet of the GC/MS machine. At this stage, the sample enters the combustion furnace where it is vaporized and then swept into a chromatographic column by a carrier gas. The solution flows through the column and the compounds in the mixture of interest are separated by virtue of their volatility and their relative interaction with the coating of the column (stationary phase) under the flow of the carrier gas (mobile phase). The molecules separated as a result of this process will come out of the tube to reach the MS detector at different times depending on their

chemical composition. This is known as their retention time. The MS then measures the molecular mass of the fragments produced as a result of the ionization of the molecule by evaluating each fragment's mass to charge (m/z) ratio. The GC/MS then produces a series of chromatograms. Chromatograms are graphs where time is measured on the X-axis and a parameter proportional to the abundance or quantity of the substance on the Y-axis.

105. When the GC/MS is used in doping control matters it produces a chromatogram and other data in regard to the T/E ratio. The "T" being Testosterone and the "E" being Epitestosterone. In most individuals the T/E ratio is approximately 1: 1. However, the evidence is that in some individuals that ratio can be as high as 2:1 or 3:1. As such, often a 4:1 T/E ratio may indicate the presence of exogenous testosterone. Accordingly a T/E ratio of 4:1 or higher is the threshold ratio established by WADA that will either trigger further testing of an athlete's sample (using IRMS) or will be used along with longitudinal studies to support an AAF. The evidence however is that certain individuals may for unknown reasons have naturally elevated T/E ratios and as such a high T/E ratio will not necessarily be determinative of the presence or use of exogenous testosterone. These individuals would therefore have constantly elevated T/E ratios and doping control test results over the years (a longitudinal study) would confirm this. In such an instance, the athlete would be required to demonstrate the physiological reason for this elevated T/E ratio.

106. The LNDD procedure is to first complete a screen test on the "A" sample. In the GC/MS screen, T and E are monitored by the main fragment produced from their respective trimethylsilyl {TMS} derivatives which is ion m/z 432. The respective retention times of T and E are approximately 15.2 and 14.3 minutes. Once the sample has passed through the machine and the chromatogram is created, the T/E ratio is estimated based on the peak area ratio. If the T/E ratio following the first screen test is above 4:1, then a T/E confirmation and an IRMS confirmation (see below for explanation of IRMS) will be performed.

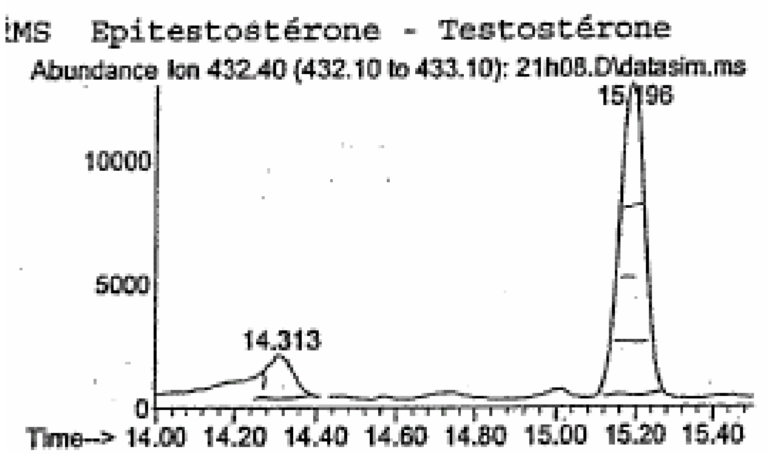
107. In a T/E confirmation test, two new aliquots are prepared. One aliquot is prepared with hydrolysis and the other without. The aliquot without hydrolysis measures "free" testosterone and epitestosterone to ensure there was no degradation of the urine sample. The expected retention times of T and E in the confirmation step are respectively, approximately 19.3 and 18.5 minutes.

108. On 21 July 2006, LNDD performed the first screen test on the "A" sample. The results of this first screen test reported a T/E ratio of 4.9:1. The screen data produced from the first screen test indicated the occurrence of an inhibition of derivatization (this is the chemical reaction to make steroids more suitable for the analysis). This fact produces features on the chromatogram which are part of the Respondent's case where it is argued the chromatograms are inadequate. On 22 July 2006 LNDD began the confirmation test for the Athlete's "A" sample. During the initial confirmation test on the 22nd of July, there was a problem with the internal standard (methyltestosterone) being too weak and the

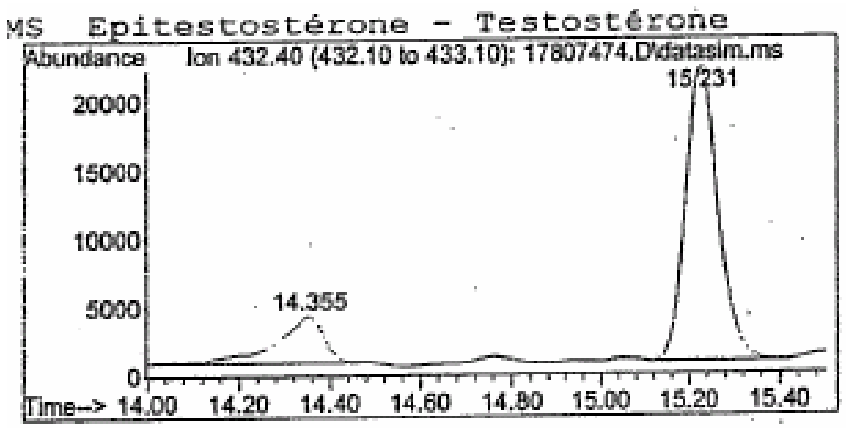
confirmation was rejected by the Lab. On 23 July 2006 a further confirmation test was performed and the result showed a T/E ratio of 11.4:1 (see USADA 0093). The LNDD conducted a second screen test on the "A" sample on 25 July 2006. The results of this test showed a T/E ratio of 5.1:1 (see USADA 0057). Contrary to the Athlete's argument that the LNDD performed a second screen test for some unknown reason, the reason for this second screen test was the occurrence of the inhibition of derivatization as mentioned above. This is generally due to the presence of compounds interfering with the reaction and the evidence from the laboratory documentation package would indicate that there was the presence of a substance that interfered with the reaction (see USADA 0056).

109. The GC/MS testing of the Athlete's "B" Sample was not performed until 3 August 2006. The testing of the "B" sample was done using only the confirmation method (in triplicate). The results of each of the 3 confirmation tests that were completed showed a 10.9:1 T/E ratio on the first test, an 11:1 ratio on the second and the third and final test produced an 11.1:1 T/E ratio. The actual A and B sample doping control results for sample 995474 appear in the lab documentation package as follows:

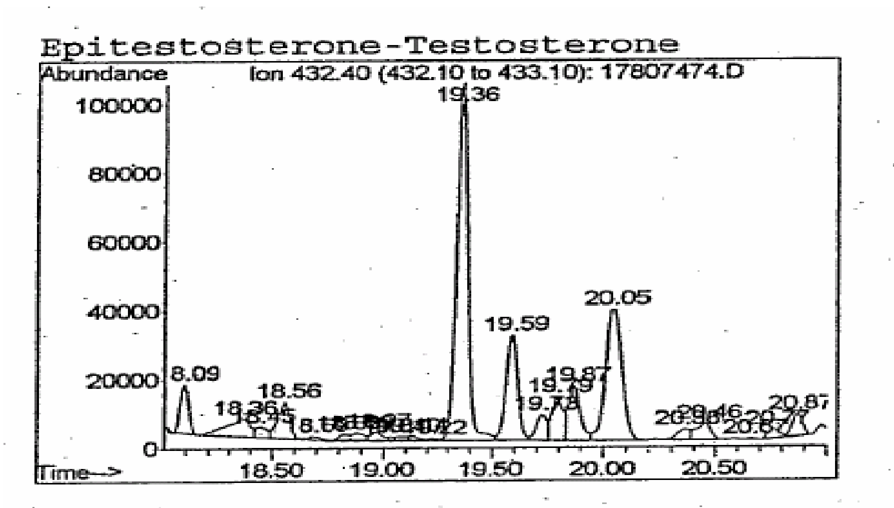
FIRST GC/MS SCREEN TEST OF "A" SAMPLE – 21 July 2006:



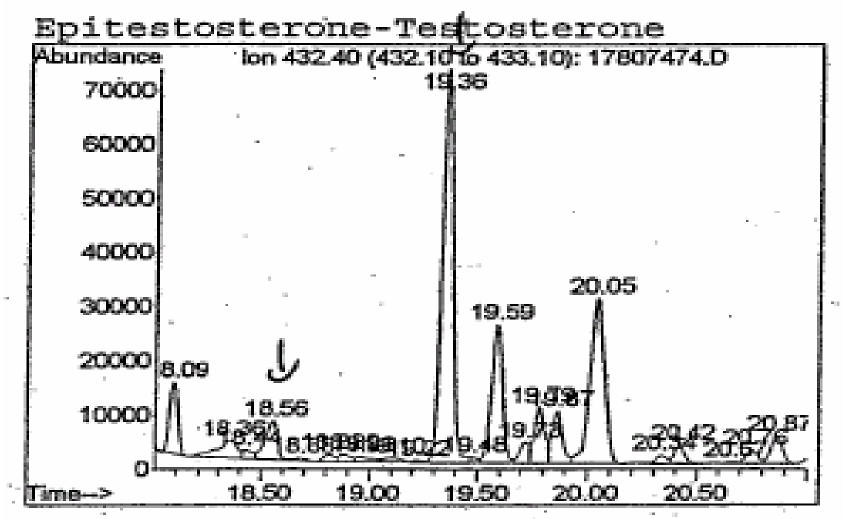
SECOND GC/MS SCREEN TEST of "A" SAMPLE – 25 July 2006:

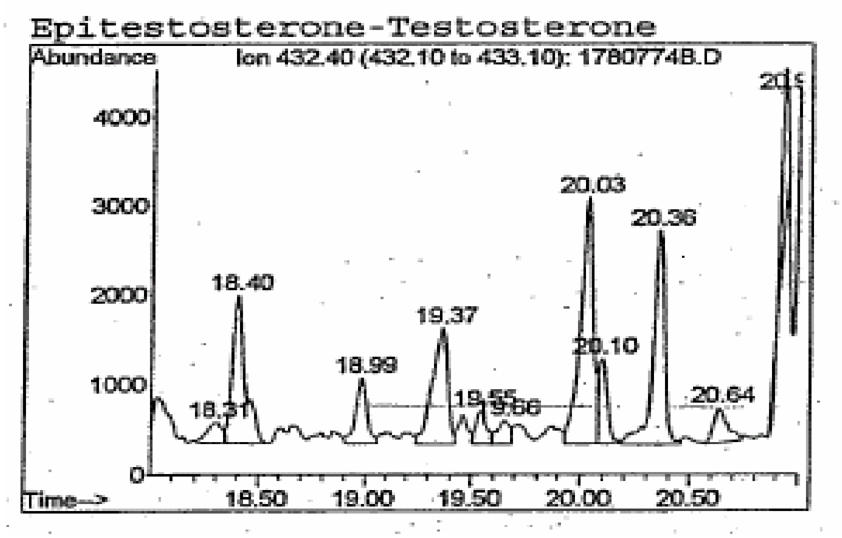


FIRST "A" CONFIRMATION TEST – 22 July 2006:

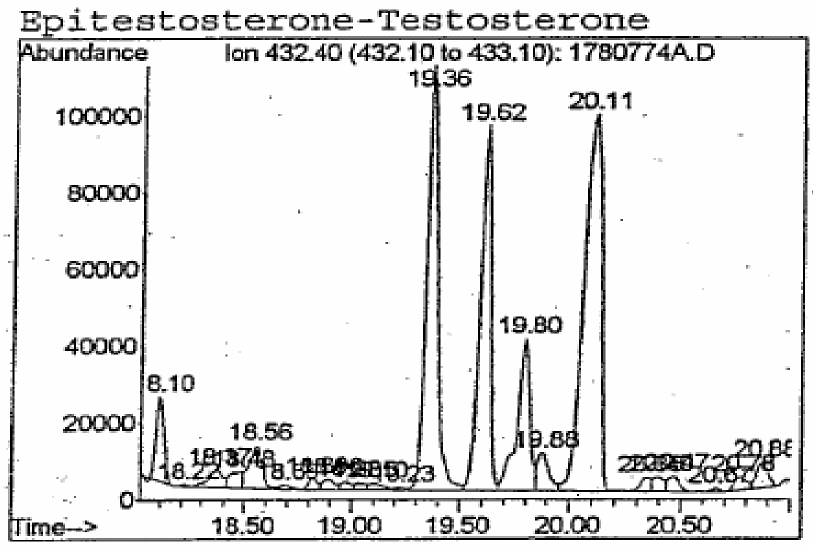


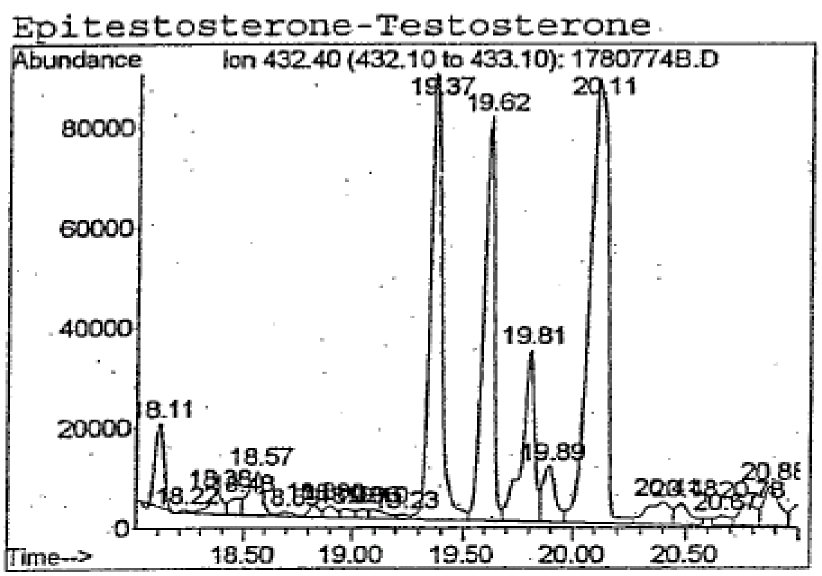
SECOND "A" CONFIRMATION TEST – 24 July 2006:

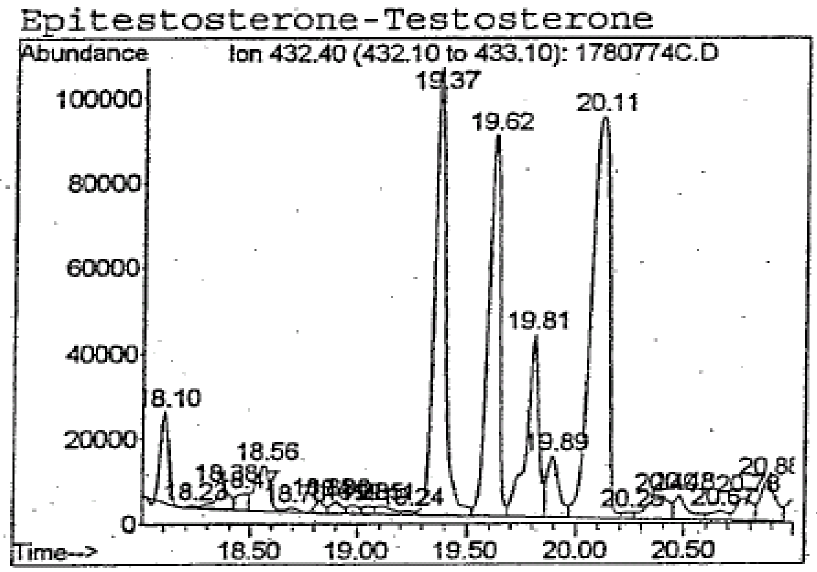


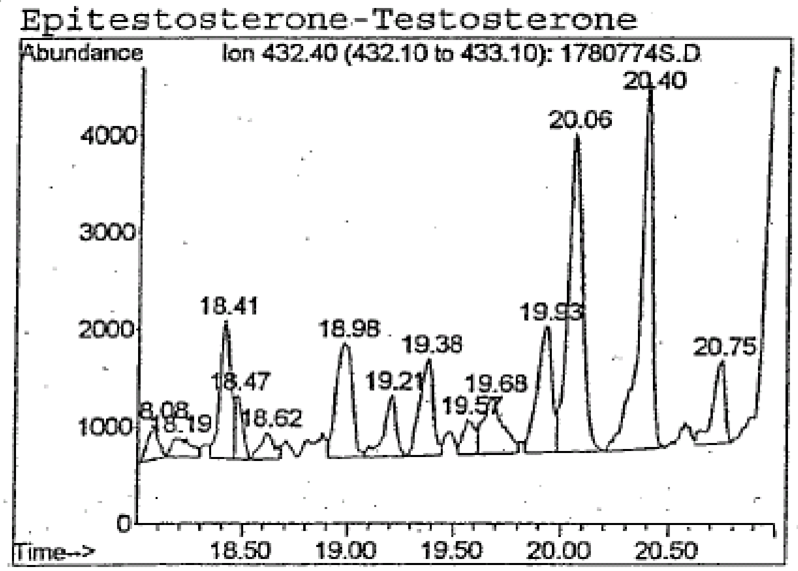


FIRST CONFIRMATION "B" TEST – 3 August 2006:



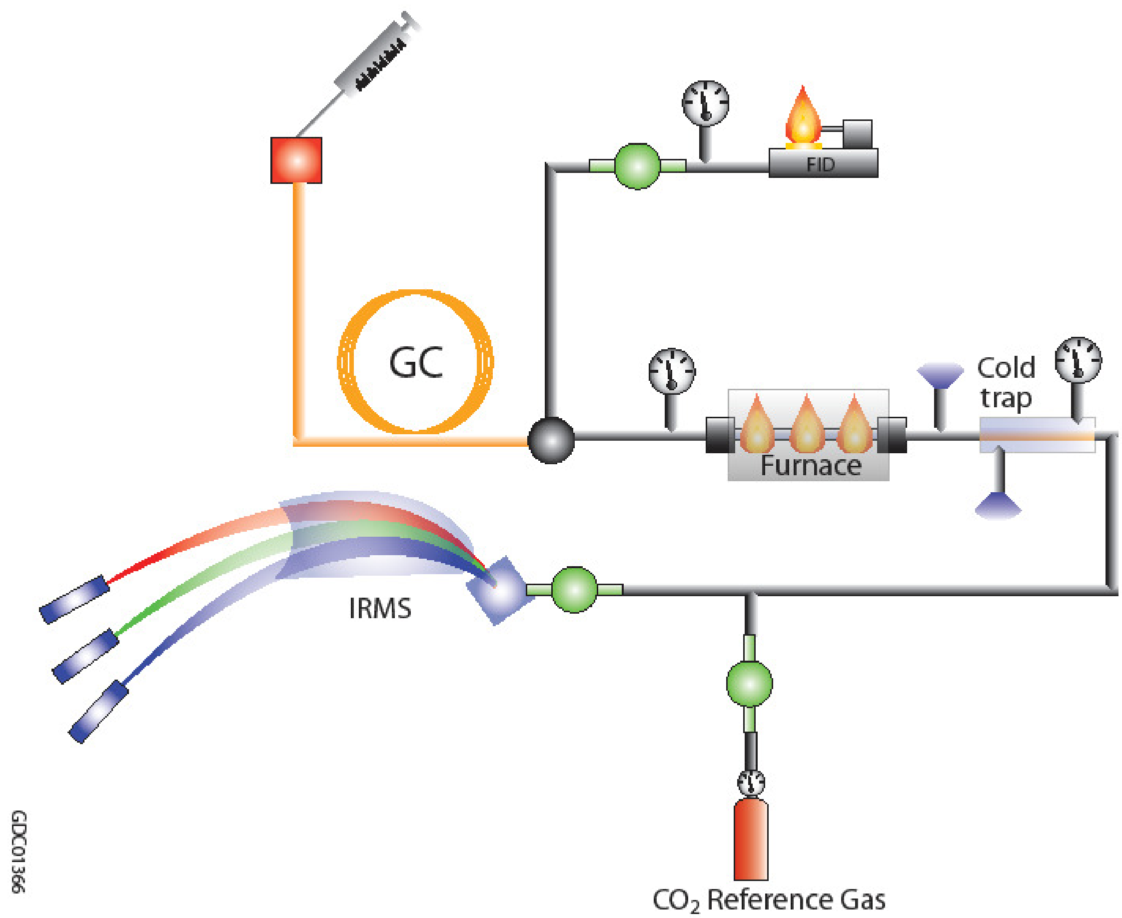



Epitestosterone-Testosterone
Abundance
Ion 432.40 (432.10 to 433.10): 1780774C.D
100000
80000
60000
40000
20000
0
Time-->
18.50
19.00
19.50
20.00
20.50
19.37
19.62
20.11
19.81
18.10
18.56
19.89
18.23
20.25
19.24


Epitestosterone-Testosterone
Abundance
Ion 432.40 (432.10 to 433.10): 1780774S.D
4000
3000
2000
1000
0
Time-->
18.50
19.00
19.50
20.00
20.50
20.40
20.06
18.41
18.98
19.38
19.93
20.75
18.47
19.21
19.68
19.57
18.19
18.62

c. The Gas Chromatographer/Combustion/Isotope Ratio Mass Spectrometer {GC/C/IRMS}

110. A GC may also be combined with an IRMS instrument to test for exogenous testosterone in doping control matters. IRMS is a technique that allows the measurement of the relative abundance of the two stable isotopes of the same element. In the case of carbon, the two stable isotopes are "carbon twelve" (symbol ^{12}C) and "carbon thirteen" (symbol ^{13}C). The relative abundance of one isotope with respect to the other is generally expressed as the ratio between the two isotopes ($^{13}C/^{12}C$), considered either as a stand-alone value or, more commonly, as the difference or "delta" (Δor δ), expressed in parts per thousand (0/00), with respect to an international reference standard. A schematic diagram of the GC/C/IRMS configuration of the instruments would look something like the following:



111. In an anti-doping laboratory the GC is coupled to a combustion carbon isotopic ratio mass spectrometry (GC/C/IRMS indicated also by the abbreviation GC-IRMS) to discriminate between the endogenous and the synthetic origin of

naturally produced steroids, mainly testosterone and/or its precursors and metabolites. Synthetic compounds have less ^{13}C than their endogenous homologues. The IRMS instrument measures the ratio of $^{13}C/^{12}C$ carbon isotope in a target analyte. In the case of doping, the IRMS test compares the $^{13}C/^{12}C$ ratio of a testosterone metabolite that is believed to be affected by exogenous testosterone to the $^{13}C/^{12}C$ ratio of an endogenous reference compound that is known not to be affected by exogenous testosterone. The principle behind the IRMS technique is the following: the sample having been introduced in the injector of the GC then passes through the column where the components are separated; the output of the GC column is then combusted (on-line) to form carbon dioxide, which, in turn, finally enters the mass spectrometer. The ratio of $^{13}C/^{12}C$ for each compound can therefore be calculated, after it has been converted (by combustion) to CO2, on the basis of the relative abundances of the peaks corresponding to a molecular mass of 44, 45 and 46 measured by the IRMS.

112. With IRMS testing, the sample solution is injected into the GC inlet where it is vaporized and swept onto a chromatographic column by a carrier gas. The solution flows through the column and the compounds comprising the mixture of interest are separated by virtue of their relative interaction with the coating of the column (stationary phase) and the carrier gas (mobile phase). The separated compounds (in this case, steroids) enter the furnace and the compound is completely combusted. The carbon atoms in the molecule are then converted to carbon dioxide (CO2). The CO2 then enters the IRMS instrument. The software that is attached to the IRMS instrument will then calculate the $\delta^{13}C$ (delta) value. This value reflects the $^{13}C/^{12}C$ ratio within the molecule. The delta value is actually the difference between the carbon 13 to carbon 12 ratio of the sample and that of an international standard material called PDB which by definition has a delta value of zero. The difference of the delta values of the endogenous compounds recovered from the testing is subtracted from the delta value of the exogenous reference compounds to indicate the likely presence of exogenous testosterone. Pharmaceutical testosterone contains less carbon 13 than natural testosterone. If the difference between the delta values of the exogenous testosterone metabolites exceed 3 delta units per mil or more an adverse analytical finding ("AAF") is reported. There is additional criterion used by WADA accredited labs to report an AAF for the presence of exogenous testosterone. If this criterion is used the delta value must be more negative than -28, regardless of the difference between the endogenous reference compound. However, this criterion is used only when the delta value of the endogenous reference compound cannot be determined.

113. The IRMS testing procedure begins with a GC/MS test to identify the relevant metabolites and their retention times. This identification of the testosterone metabolites by GC/MS is different than the GC/MS performed in the T/E test. The identification of testosterone metabolites is done first. Then the determination of the isotopic values is done by GC/C/IRMS. The GC/C/IRMS is incapable of directly identifying substances; rather it can only determine the

isotopic values of a peak eluted at the given retention time.

114. These combinations of instruments produce chromatograms and other data. As with GC/MS, the peak area under the chromatogram for the respective metabolites is calculated to obtain the $\delta^{13}C$. For reasons that will be explained later, the $\delta^{13}C$ is more easily calculated if the chromatograms produced have fully separated peaks, meaning that there is no interference from other substances and the peak looks much like a sharp triangle, without "shoulders" on either side of the peak.

115. The compounds selected at the LNDD as endogenous references in IRMS testing are 11-ketoetiocholanolone and 5beta-pregnandiol. The exogenous testosterone metabolites LNDD measures are androsterone, etiocholanolone, 5alpha-androstandiol and 5beta-androstandiol. Therefore, once the $\delta^{13}C$ is obtained for 11-ketoetio and 5beta-pdiol through IRMS it is subtracted from the $\delta^{13}C$ value obtained for androsterone, etiocholanolone, 5alpha-androstandiol and 5beta-androstandiol.

116. To obtain the $\delta^{13}C$ values for all of the above compounds, the urine sample undergoes a pretreatment procedure, in which one aliquot of urine is split into three fractions. The process also includes a derivatization reaction. The results of these reactions are "acetyl derivatives" of the original steroids, i.e. "acetylated" (AC) steroids. LNDD therefore performs GC/C/IRMS tests on 3 different fractions for each sample. Fraction 1 (F1) contains 11-keto etiocholanolone, Fraction 2 (F2) contains androsterone and etiocholanolone; Fraction 3 (f3) contains 5-alpha androstandiol, 5-beta-androstandiol and 5-beta-pregnandiol. A chromatographic reference standard, 5-alpha androstanol acetate (5-alpha AC), is added to all fractions. The 5-alpha AC is the chromatographic reference standard.[8]

117. On 24 July 2006 LNDD performed the IRMS Test of the Athlete's "A" Sample. The four differences in delta values between metabolite and endogenous reference compounds were as follows:

Etio-11ketoetio	***-2.58 per mil***
Andro-11ketoetio	***-3.99 per mil***
5betadiol-pdiol	***-2.15 per mil***
5alphadiol-pdiol	***-6.14 per mil***

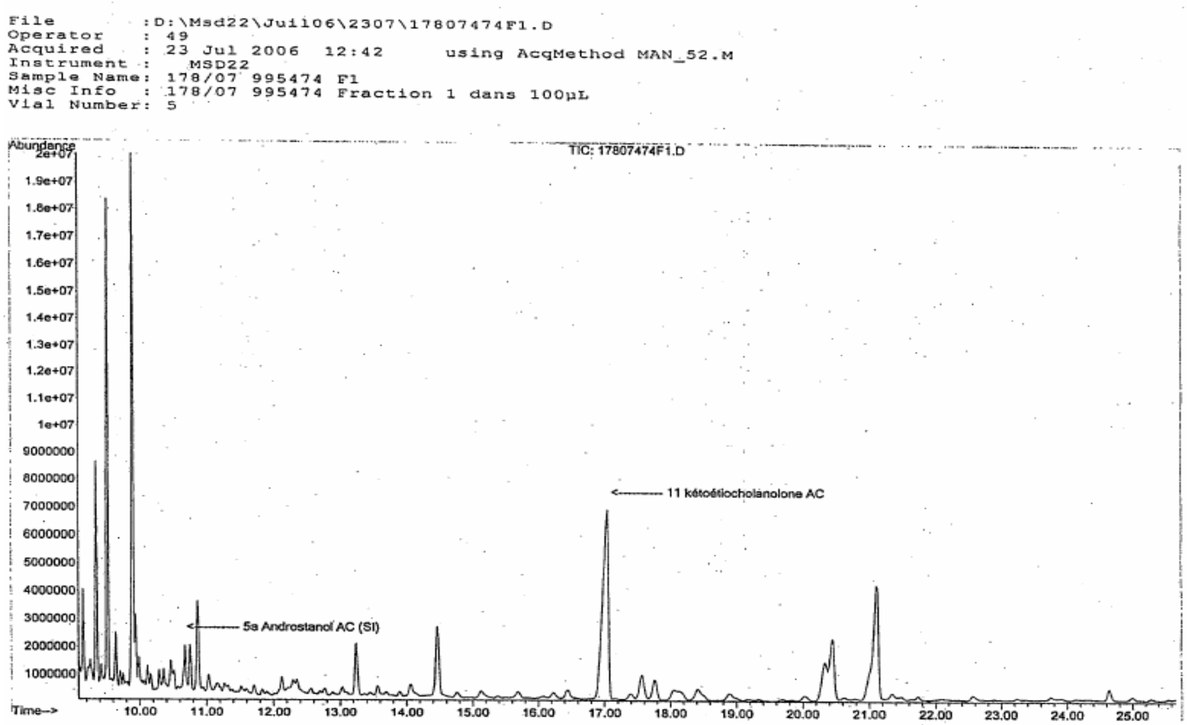
118. LNDD concluded that an adverse analytical finding should be reported for the "A" sample according to WADA TD2004EAAS. The actual A and B sample doping control results for sample 995474 appear in the lab documentation package as follows:

[8] This chromatographic reference standard was frequently referred to in the arbitration proceedings and, thus, in the transcripts as the *internal standard* which it is not.

IRMS Test of Athlete's "A" Sample:

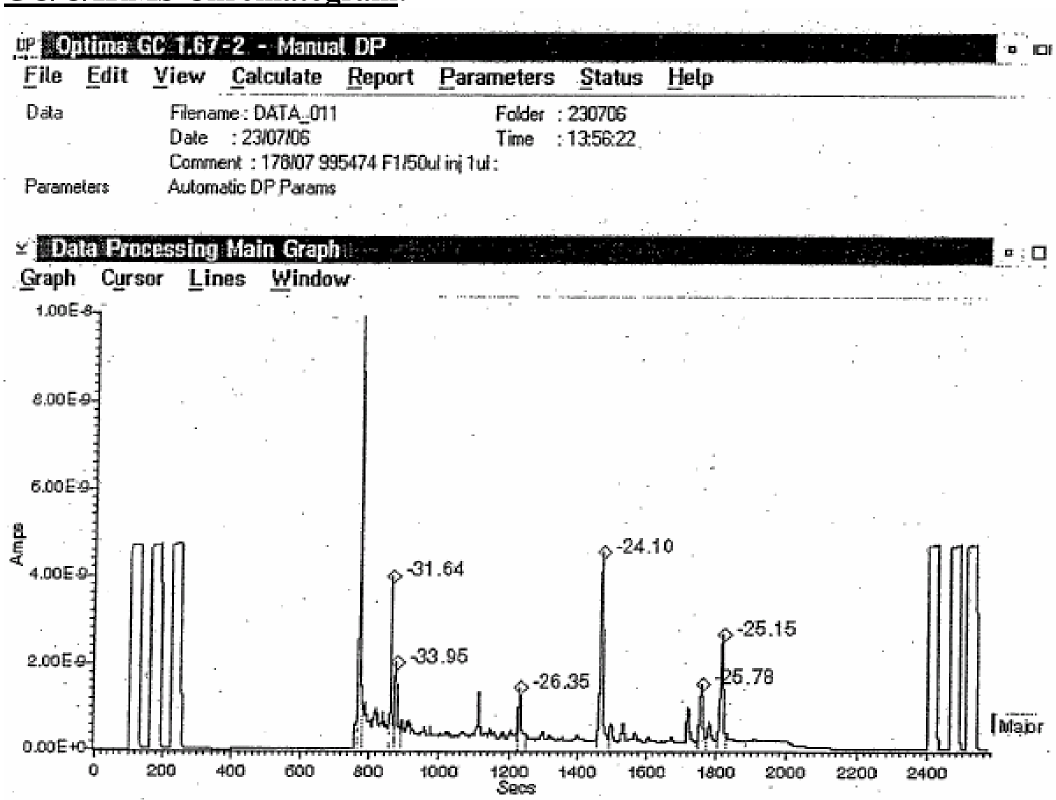
<u>Sample Fraction F1 – 5-alpha AC (chromatographic reference standard) and 11-keto etiocholanolone</u>

<u>GC/MS Chromatogram</u>:



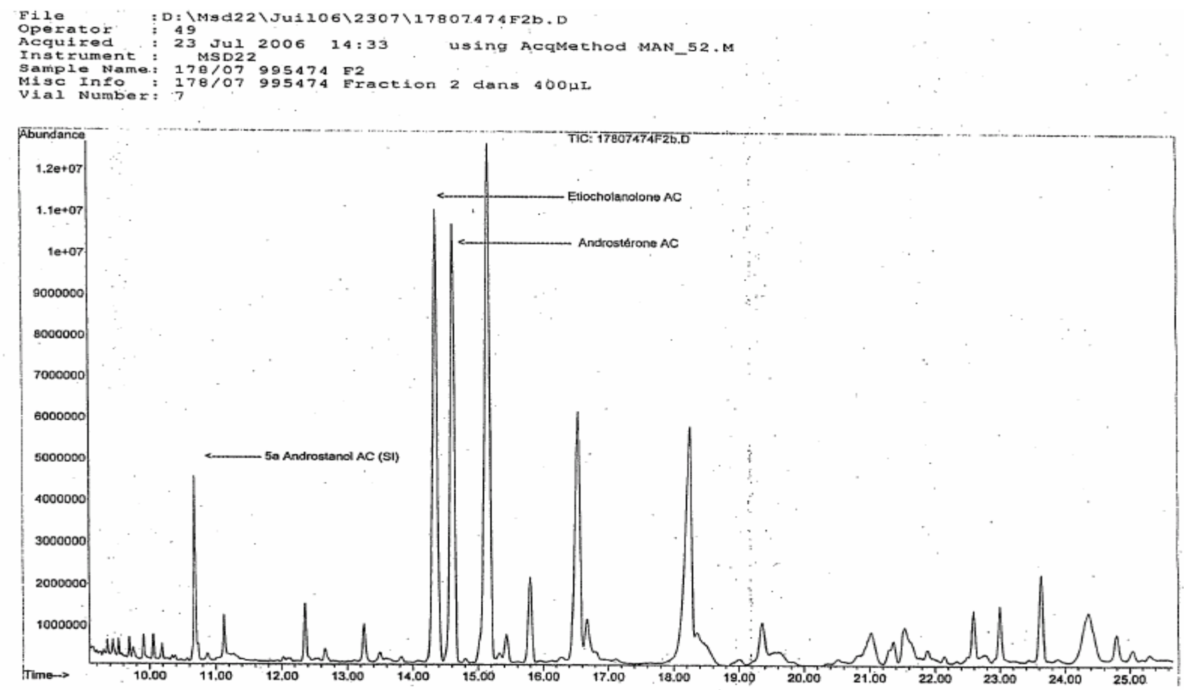
119. This exhibit indicates that there are two peaks of interest here. The chromatographic reference standard, 5-alpha AC and the 11-ketoetiocholanolone.

GC/C/IRMS Chromatogram:



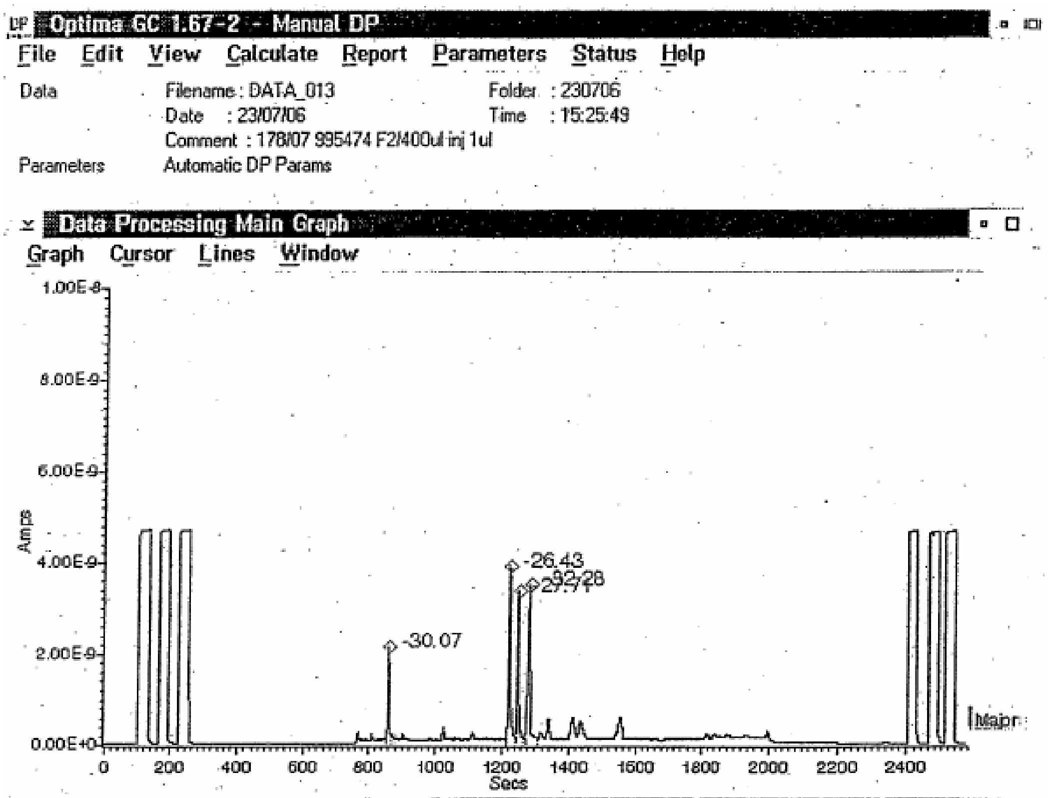
Sample Fraction F2 – 5-alpha AC (chromatographic reference standard), androsterone and etiocholanolone:

GC/MS Chromatogram



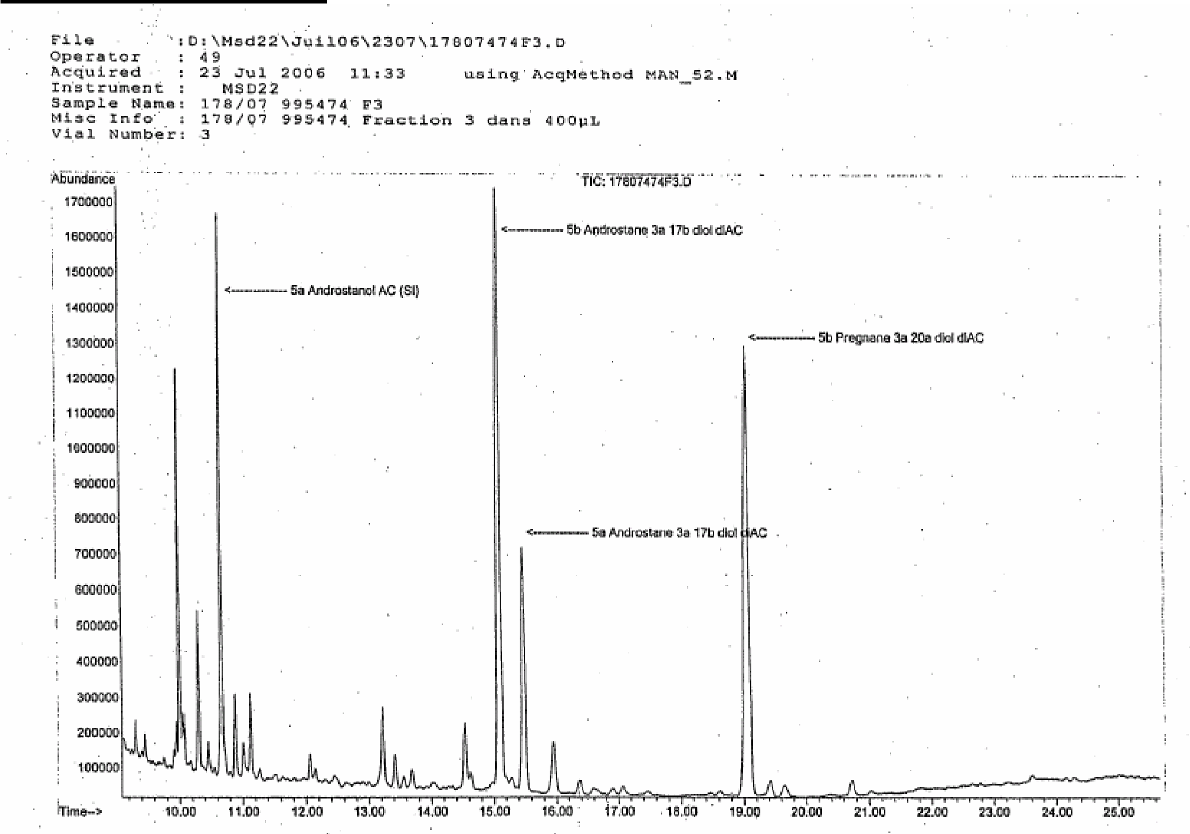
120. This chromatogram indicates that there are 3 peaks of interest. 5-alpha AC (the chromatographic reference), etiocholanolone and androsterone.

<u>GC/C/IRMS Chromatogram</u>:



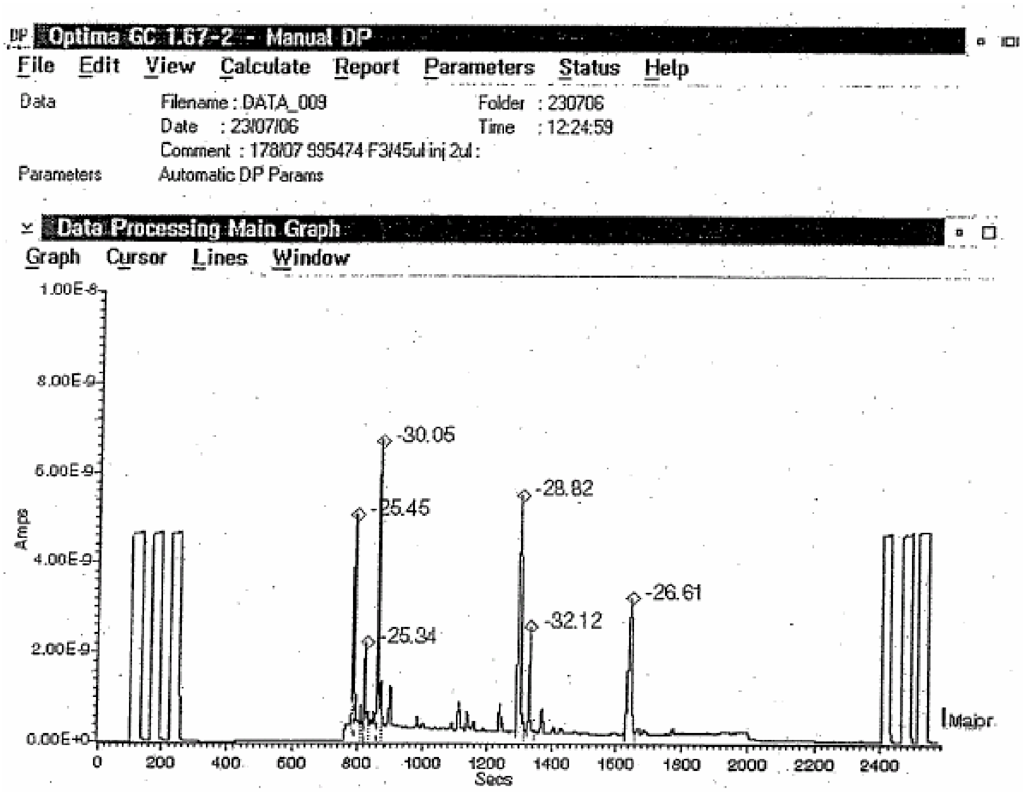
Sample Fraction F3 – 5 alpha androstanol (chromatographic reference standard), 5 alpha-androstandiol, 5 beta-androstandiol and 5 beta pregnandiol

GC/MS Chromatogram



121. **This exhibit represents the GC/MS that was run for Sample F3. It indicates there are 4 peaks of particular interest. The 5-alpha AC (chromatographic reference standard), 5-beta-androstandiol, 5-alpha-androstandiol and 5beta-pregnandiol.**

<u>GC/C/IRMS Chromatogram</u>:



122. **This exhibit is the diagram representing the GC/C/IRMS of Fraction 3. At this point, the lab looks for the general pattern of the GC/MS and GC/C/IRMS plots. The evidence of the Athlete's experts Dr. Meier-Augenstein and Dr. Davis is that the relative retention times from the GC/MS and the GC/C/IRMS must be compared to identify the steroid of interest.**

123. **On 3 August 2006, LNDD began the IRMS confirmation of the Athlete's "B" sample. The four differences in delta values between metabolite and endogenous reference compounds were as follows:**

Etio-11ketoetio	***-2.02 per mil***
Andro-11ketoetio	***-3.51 per mil***
5betadiol-pdiol	***-2.65 per mil***
5alphadiol-pdiol	***-6.39 per mil***

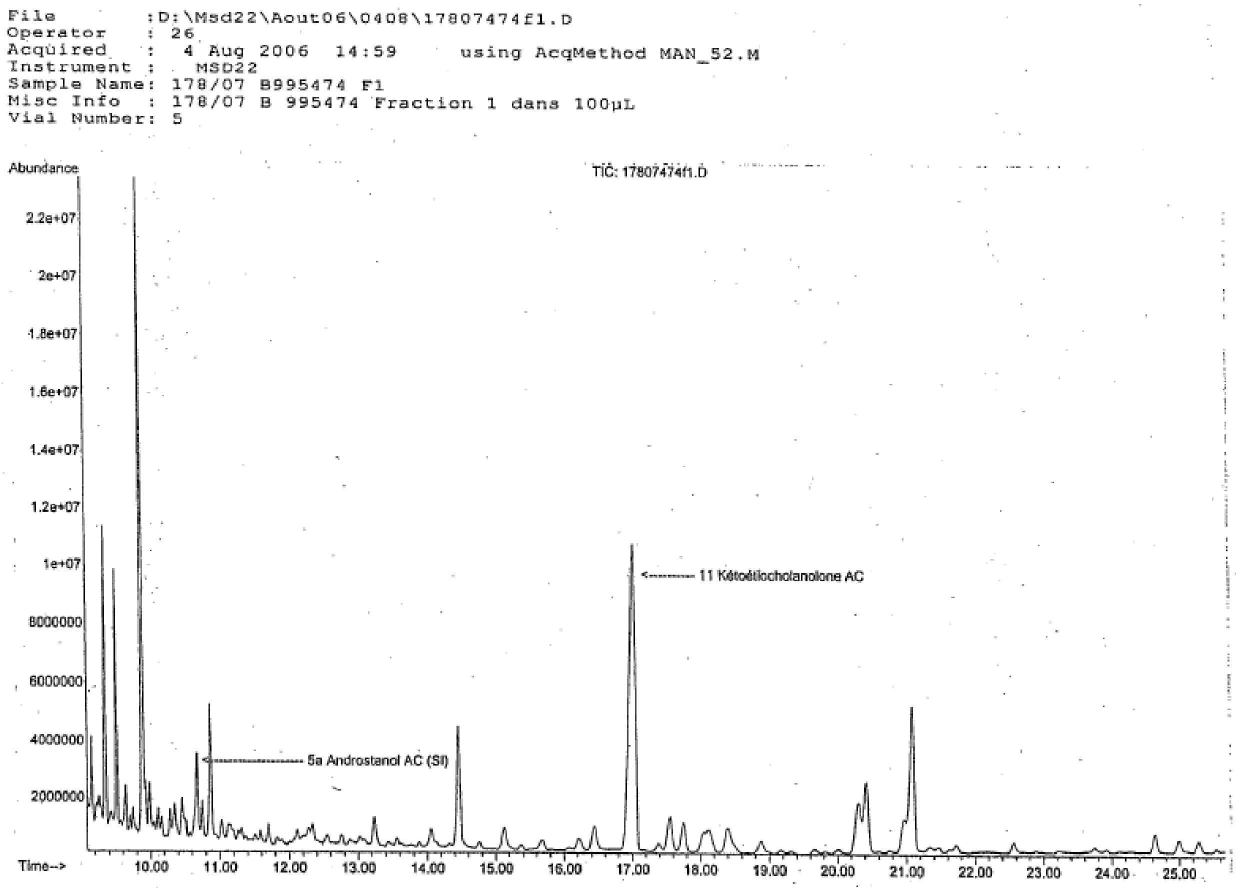
124. **LNDD concluded that an AAF should be reported for the "B" sample according to WADA TD2004EAAS.**

125. **The laboratory documentation for the Athlete's "B" sample appears as follows:**

IRMS Test of Athlete's "B" Sample:

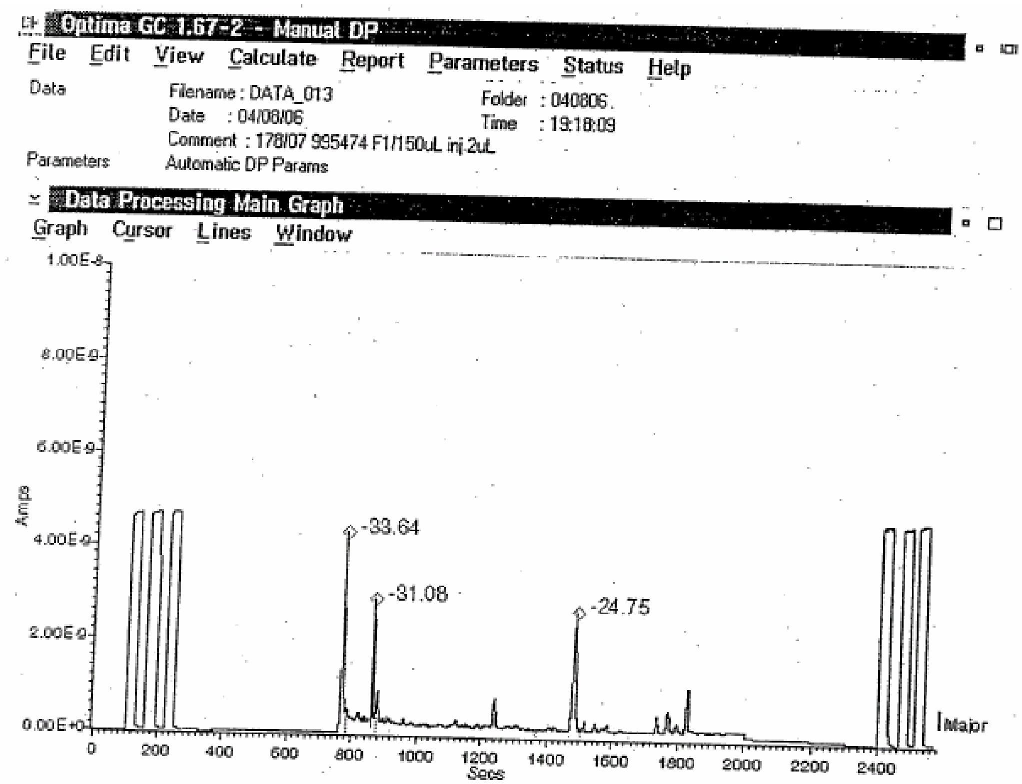
Sample Fraction F1 – *5–alpha AC (chromatographic reference standard) and 11-keto etiocholanolone*:

GC/MS Chromatogram:



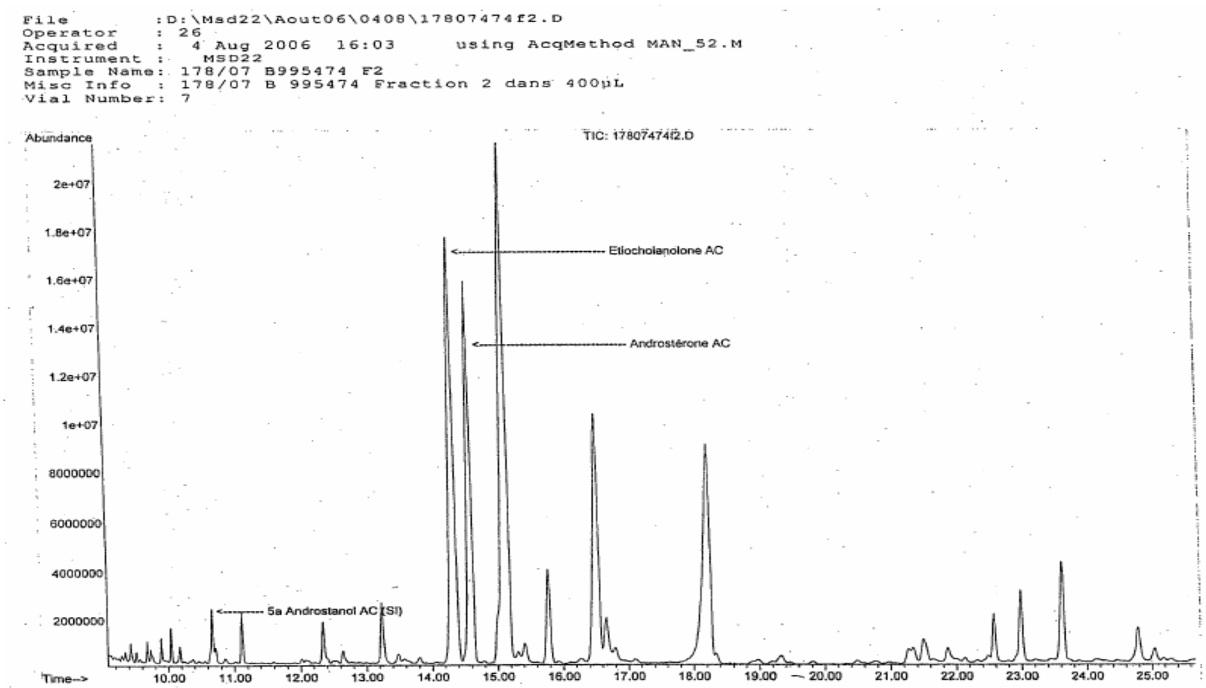
126. **The peaks of interest according to the first fraction GC/MS run are 5-alpha AC (the chromatographic reference standard) and 11-ketoetiocholanolone.**

GC/C/IRMS Chromatogram:



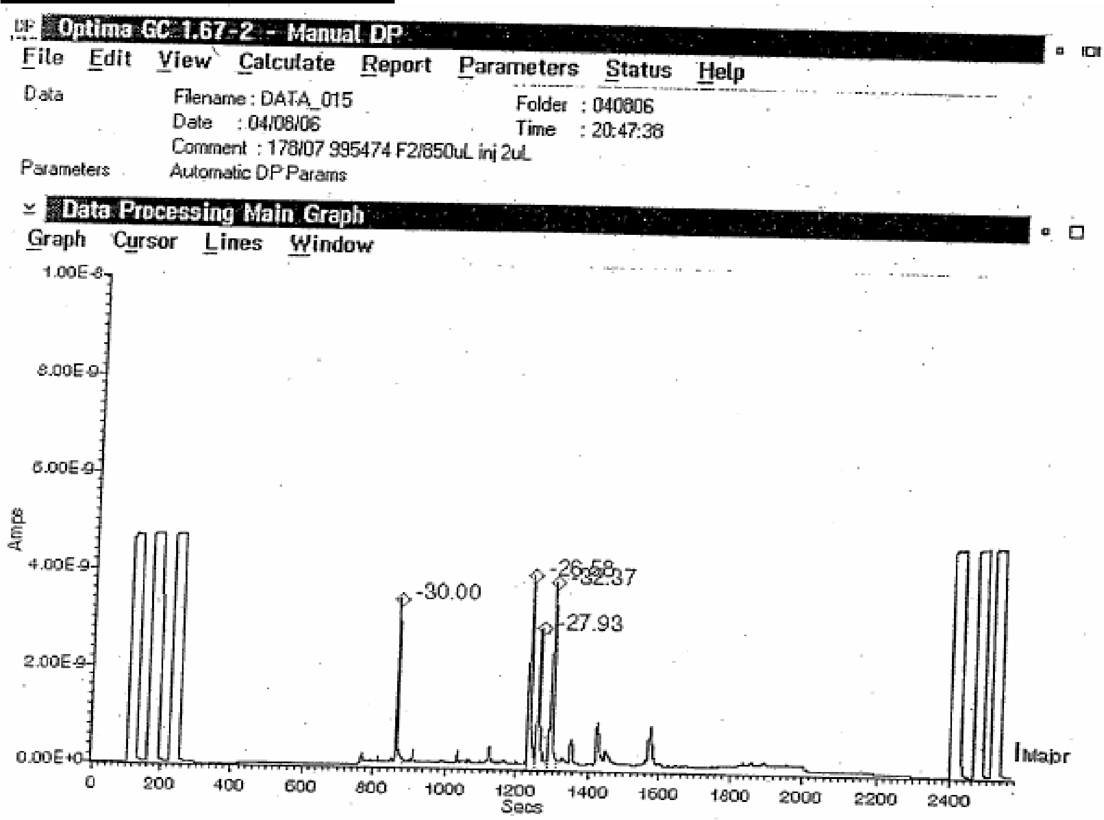
Sample Fraction F2 – 5-alpha AC (chromatographic reference standard), androsterone and etiocholanolone:

GC/MS Chromatogram:



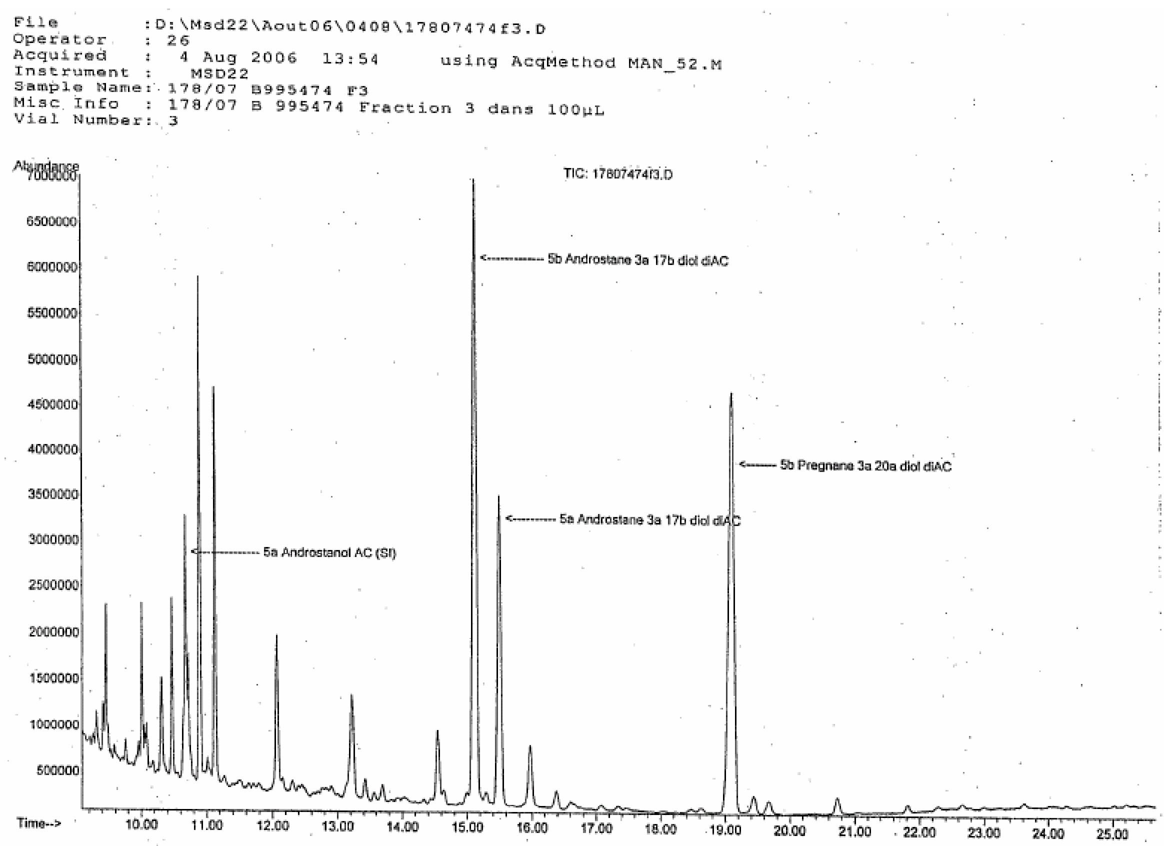
127. The peaks of interest for sample Fraction 2 are 5-alpha AC (the chromatographic reference standard), androsterone and etiocholanolone.

<u>GC/C/IRMS Chromatogram</u>:



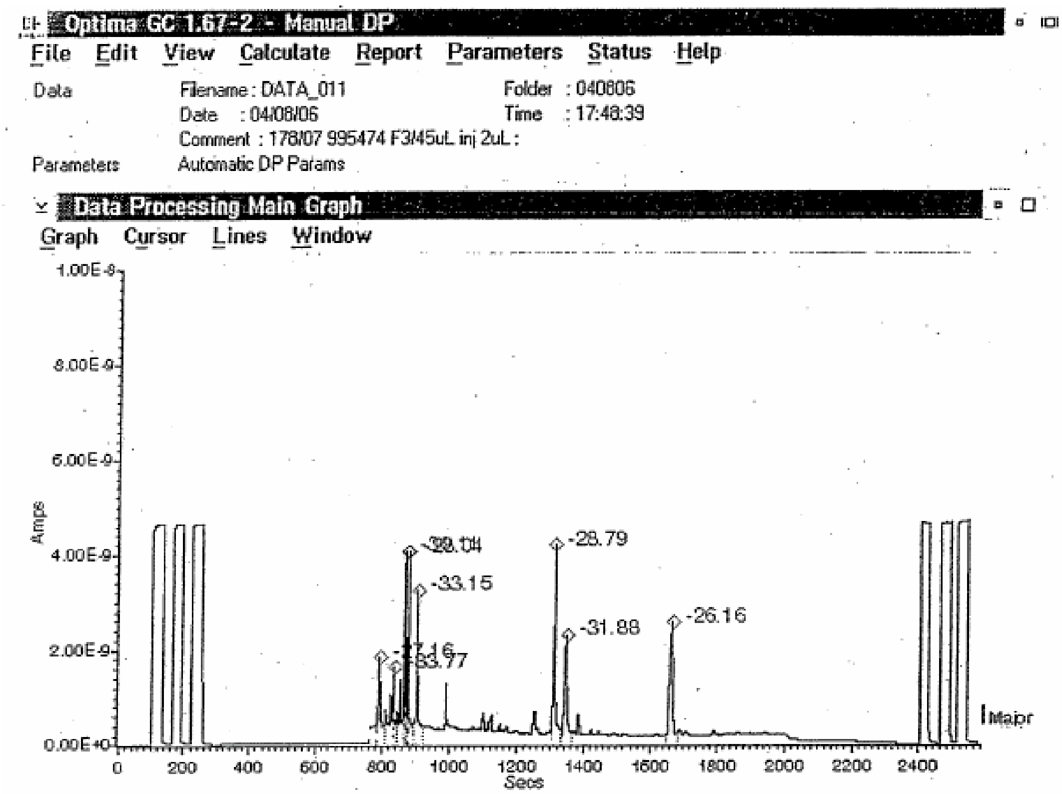
Sample Fraction F3 – 5-alpha AC (chromatographic reference standard), 5 alpha-androstandiol, 5 beta-androstandiol and 5 beta pregnandiol:

GC/MS Chromatogram:



128. **The GC/MS run of sample fraction 3 indicates there are 4 peaks of interest representing, 5-alpha AC (the chromatographic reference standard), 5 beta-androstandiol, 5 alpha androstandiol and lastly, 5 beta pregnandiol.**

GC/C/IRMS Chromatogram:



129. **This exhibit is the diagram representing the GC/C/IRMS of Fraction 3. At this point, the Lab looks for the general pattern of the GC/MS and GC/C/IRMS plots. The evidence of the Athlete's experts Dr. Meier-Augenstein and Dr. Davis is that the relative retention times from the GC/MS and the GC/C/IRMS must be compared to identify the steroid of interest.**

d. The testing of the seven additional samples

130. **The majority of the Panel by its interlocutory award of 17 March 2007 refused to place any restrictions on the testing of the seven "B" samples held in storage by the Lab following the processing of the related "A" sample.**

131. **The seven "B" samples were analysed with the GC/MS and the GC/C/IRMS instruments. A summary of the results of the findings of that analysis is set out in the table below. The stage 17 analysis is also set out in the table and is within the black box.**

132. **In order to create a blind analysis environment for the technicians carrying out the analysis of these samples, three additional samples were included in this testing (they were provided by Dr. Aguilera) to ensure that a lab technician would have no way of knowing that the particular sample being tested belonged to the Athlete.**

Table 3

Collection Date	Blind Sample #	UCI Sample #	5alpha diol-Pdiol	5beta diol-Pdiol	Andro-11 Keto	Etio-11 Keto	LNDD Page #
7/3/2006	993865	995462	—	-1.04	0.22	-0.95	LNDD1488
7/11/2006	993856	994203	-2.91	-1.05	-0.25	-1.29	LNDD1391
7/13/2006	993855	994277	**-4.62**	**-4.09**	-1.99	-2.32	LNDD1106
7/14/2006	825425	994276	-1.01	-0.70	-1.70	-1.04	LNDD1297
7/18/2006	825428	994075	**-5.06**	**-3.56**	-1.22	-1.89	LNDD0915
7/20/2006	*******	995474A	**-6.14**	-2.15	**-3.99**	-2.58	USADA0186
7/20/2006	*******	995474B	**-6.39**	-2.65	**-3.51**	-2.02	USADA0352
7/22/2006	825429	994080	**-4.80**	-1.67	-1.36	-1.68	LNDD1012
7/23/2006	825424	994171	**-4.96**	-1.45	-0.64	-1.43	LNDD0725
Aguilera	825427	**NL1**	-1.31	-0.95	0.00	-0.94	LNDD1582
Aguilera	825426	**NL2**	-0.77	-0.88	0.32	-0.74	LNDD0820
Aguilera	825423	**NL3**	-1.21	-0.79	0.09	-0.91	LNDD1203

133. The Athlete's expert, Dr. Davis, was in attendance at the retesting of these samples. He testified that there were two processes occurring simultaneously during the retesting, the chemistry phase and the automatic analytical phase.

134. In looking at the chart above, it can be seen that 4 out of the 7 samples contained some evidence of the presence of exogenous testosterone. These results are highlighted above in bolded print

e. The Electronic Data File {EDF} Removal & Re-processing

135. EDFs are electronically preserved records of the history of the Carbon Isotope Ratio testing. It was alleged by the Athlete that the IsoPrime Instrument used had very outdated software that was not designed for the particular instrument and that the LNDD used wrong specifications thus resulting in inaccurate results.

136. As indicated above, as part of the resolution of discovery issues the EDF files from the GC/C/IRMS instrument were copied and retained by the Panel's expert. The files were then run in different modes on the original equipment and on the new GC/C/IRMS instrument using *Masslynx* software. In addition to re-processing the data on the *Masslynx* software, the data was reprocessed three different ways using the original software.

137. The re-processing of the EDFs was carried out under the supervision of Dr. Francesco Botrè, the Panel's independent expert. The Technical Experts of the Parties were also present, as well as the same LNDD analyst who first processed the data regarding the "A" and "B" samples of the Athlete.

138. The re-processing was performed on the old instrument as well as the new

instrument and no consultation of the Laboratory Documentation Packages was made. This was done to ensure the analyst would operate in an unbiased fashion.

139. **The result of that re-running of the data is reflected in the table below.**

995474	Original Result	Auto	Manual	Zero	Masslynx
A Sample					
E-11K	-2.58	-1.72	-2.32	-1.76	-2.18
A-11K	-3.99	-3.14	-3.65	-2.94	-3.78
5B-P	-2.15	-1.70	-2.65	-2.08	-2.63
5A-P	-6.14	-5.65	-6.95	-5.55	-7.22
B Sample					
E-11K	-2.02	-0.32	-0.35	-1.66	-2.39
A-11K	-3.51	-1.67	-1.61	-2.81	-4.01
5B-P	-2.65	-3.37	-3.05	-2.33	-2.80
5A-P	-6.39	-7.61	-7.19	-5.58	-7.03

Blanks	Original Result	Auto	Manual	Zero	Masslynx
A Sample					
E-11K	-0.87	-0.51	-0.56	-0.06	0.09
A-11K	-0.48	-0.49	-0.53	-0.02	-0.59
5B-P	-0.55	-0.92	-0.27	-0.47	-1.00
5A-P	-1.59	-3.65	-1.87	-1.46	-2.45
B Sample					
E-11K	-1.08	-1.11	-0.94	-0.25	-0.51
A-11K	-0.08	0.03	0.17	0.83	0.55
5B-P	-0.67	-1.33	-0.69	-0.54	-1.52
5A-P	-1.60	-3.45	-1.89	-1.24	-3.66

140. **The results of the data from re-processing of the EDFs as summarized by Dr. Botrè in his report are as follows:**

The data summarized in the above two tables allow to draw the following observation:

a) the difference of the δ values between pregnanediol and 5-alpha-diol is always greater than 3, for both the "A" and the "B" sample, regardless the protocol followed to process/reprocess the relevant EDF;

> ***b) the difference of δ values between pregnanediol and 5-alpha-diol is maximal* [meaning that the values increased from the original values reported in the lab documentation packages][9] *if the EDFs are reprocessed by the new instrument, both on the "A" and on the "B" samples;***
>
> ***c) the difference of the δ values of 11-keto-etiocholanolone and etiocholanolone is always smaller than 3, for both the "A" and the "B" sample, regardless the protocol followed to process/reprocess the relevant EDF;***
>
> ***d) both on the "A" and on the "B" samples, the difference of the δ values of 11-keto-etiocholanolone and etiocholanolone is minimal if the EDFs are reprocessed by the old instrument and by the totally automatic procedure (automatic subtraction of the background);***
>
> ***e) the difference of the δ values between pregnanediol and 5-beta-diol is always smaller than 3 for the "A" sample, regardless the protocol followed to process/reprocess the relevant EDF; while it is slightly greater than 3 on the "B" sample in the case the EDFs are reprocessed performing either the totally automatic correction of the background or the manual correction of the background;***
>
> ***f) the difference of the δ values between 11-keto-etiocholanolone and androsterone is slightly smaller than 3 on the "A" sample only in the case the re-processing is performed automatically and without subtraction of the background; in all other re-processing modes the difference is greater than 3;***
>
> ***g) data obtained by the totally automatic procedure (i.e. with the automatic subtraction of the background) gave rise, both on the occasion of the "A" and of the "B" analysis, to a value of the δ difference between pregnanediol and 5-alpha-diol greater than 3 also for the negative reference urine;***
>
> ***h) data obtained by the re-processing of the EDFs on the new instrument gave rise, on the occasion of the analysis of the "B" sample, to a value of the δ difference between pregnanediol and 5-alpha-diol greater than 3 also for the negative reference urine.***

7.11. The above data also show that the manual subtraction of the background performed by the Paris laboratory, apart from being covered by their internal Standard Operating Procedures, appears to be a scientifically sound process, aimed to improve the quality of the signal and, therefore, the reliability of the

[9] As advised by Dr. Botrè to the Panel when explaining that he had an English language problem in using the word "maximal".

obtained results, and not to alter the results of the analysis. This is particularly evident if one considers that the totally automatic re-processing of the EDFs on the old instrument gave rise to a value of the difference between pregnanediol and 5-alpha-diol greater than 3 also for the negative reference urine, both on the occasion of the "A" and the "B" sample analysis.

7.12. Apart from the numeric data, the appropriateness of the manual subtraction of the background is also evident from the comparison, between the manual and the automatic subtraction of the background, of the baseline of the upper part of the plots reported on the graphical page of the relevant, reprocessed outputs.

141. Dr. Botrè concluded in his report that

7.13. Finally, there was nothing in the data obtained by re-processing the EDFs related to the stability and to the linearity runs that could invalid*[ate] *the results of the analysis of the "A" and of the "B" sample.

142. Dr. Davis also attended at the re-processing of the EDFs and testified that after the numbers were reprocessed, the software came up with very different numbers than the original sample. Dr. Davis testified that the LNDD staff stated this was because they had been unable to save the different points during re-processing. It was the position of Dr. Davis that this shouldn't be the case. He claims that in the software there is a "safe parameter file" that can move all the background points, add points, remove them, drag them, drop them etc and that every single manipulation that is done to these points would be automatically saved. He further indicated that the laboratory technicians were unfamiliar with the software.

D E C I S I O N

143. On 25 July 2006, the Laboratoire National de Dépistage du Dopage {LNDD} reported to the UCI that there had been an adverse analytical finding with respect to the Respondent's "A" sample, consistent with the use of Testosterone or one of its precursors. *L'analyse complémentaire par spectrométrie de masse de rapport isotopique indique une origine exogène des metabolites de la Testostérone, cohérente avec une prise de Testostérone ou de l'un de ses précurseurs*.[10] Testosterone is an endogenous androgenic anabolic steroid, a prohibited substance listed in the 2006 Prohibited List in class S1.1.b.

144. On 5 August 2006, the LNDD subsequently reported to the UCI that there had been a confirmation AAF on the Athlete's "B" sample. The results of this second test were also consistent with the use of Testosterone or one of its precursors.

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[10] Exhibit 24, USADA 0188-0189.

145. There are in effect two allegations in the Lab report which are mirrored in the charge by USADA. The first allegation is that the Athlete had exogenous testosterone in his sample, a Prohibited Substance as provided for in UCI Regulations in Article 15.6.3.[11] This allegation is based upon the GC/C/IRMS analysis of the Lab. The second allegation is that the T/E ratio has been violated as provided for in UCI Regulations in Article 15.1.3.[12] This allegation is based upon the GC/MS analysis by the Lab.

146. The general scientific reliability and reliance upon IRMS testing has been the subject of comment by the Court of Arbitration for Sport {CAS} in the following cases;

> **In <u>Susin v. FINA</u> the CAS Panel held that even though the T/E ratio in the athlete's B specimen was not reliable because it may have been affected by bacterial degradation, IRMS analysis provided definitive proof of doping:**
>
> > ***Based upon the above analysis, the Panel has concluded that: (a) the IRMS analysis provides conclusive scientific evidence of an exogenous administration of testosterone and; (b) the Panel is entitled to rely upon the IRMS analysis as an independent and sufficient basis for finding that the Appellant committed a doping offence under FINA Rule DC 2.1(a)***[13]
>
> **<u>IAAF v. Dos Santos</u> involved a Brazilian runner with an IRMS delta/delta value for a metabolite of approximately -6 […]. The CAS Panel concluded:**
>
> > ***The IRMS analysis provides additional direct and conclusive scientific evidence of an exogenous administration of the prohibited substance testosterone by the Athlete***

In <u>WADA v. Wium</u>, the Panel held that IRMS analysis is not affected by sample degradation and that IRMS independently determines doping. Several other cases have reported on the same issue and concluded the IRMS is a scientifically reliable method of detecting the presence of exogenous testosterone including, <u>IAAF v. Czech Athletic Federation and Zubec</u>, CAS 2002/A/382; <u>UCI v. Moller</u>, CAS 99/A/239; <u>UCI v. Baker & KNWU</u>, CAS 2005/A/936, <u>UCI v. Skelde</u>, 1998 CAS 98/192. Several of these decisions involved AAFs reported by the same Lab involved in this proceeding.

147. USADA in a letter dated 19 September 2006 charged the Athlete with a doping violation based upon the Lab analytical work establishing an AAF for exogenous testosterone or its precursors as further corroborated by an elevated

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[11] UCI article 15.6.3 adopts S1. Anabolic Agent's from Wada's Prohibited List.
[12] See also S1 1.b of Wada's Prohibited List.
[13] CAS 2000/A/274 at Para. 220.

testosterone to epitestosterone ("T/E") ratio which could only be compatible with exogenous administration. Either charge is enough to support a doping rule violation triggering the application of sanctions upon the Athlete. It is unnecessary that both alleged infractions be proved to the comfortable satisfaction of the Panel so long as at least one of the two allegations meets the required burden of proof.

148. The USADA jurisprudence is explicit on the foregoing point as found in *USADA* v. *Hartman*, June 19, 2006, Similarly, in Susin v. FINA, the CAS Panel wrote,

> ***The T/E Rule and the IRMS Rule are, in essence, alternative and non-exclusive evidentiary rules. […] given the limited evidentiary purpose of the T/E Rule and the IRMS Rule, the Panel does not believe that there is any reason to conclude that a T/E ratio greater than six (6) to one (1) must be proven in every case in order to make a positive finding of doping. […] In particular, the Panel find that there is no good reason to give the T/E ratio precedence over IRMS analysis, a scientific method which provides direct and conclusive evidence of an exogenous administration of testosterone.***

149. Under UCI Regulations, in Article 16, the member organization has the burden of establishing that an anti-doping rule violation has occurred. Chapter IX of the UCI rules provides the necessary direction for the management of disciplinary hearings before the relevant National Federation. Article 230 provides that *"the case* [shall be] *investigated by the competent hearing body of the License-Holder's National Federation in accordance with the regulations of the License-Holder's National Federation*. In this particular instance the regulation governing the procedures of this hearing is the USADA Protocol. In consequence of the License Application executed by the Respondent on 16 January 2006, he also binds himself to this Protocol.

150. The effect of the UCI Regulations in Article 16 is to make it unnecessary for USADA to prove intent, fault, negligence or knowing use on the part of the Athlete in order to establish an anti-doping rule violation. The principle of strict liability is well established in doping cases. (See Oleksandr Pobyedonostsey v. International Ice Hockey Federation CAS 2005/A/990, ATP v. Valasov a decision of the ATP Anti-Doping Tribunal dated 24 March 2005 confirmed on appeal to CAS 2005/A/873, UCI v. Moller, UCI v. Bakker & KNWU). Therefore, the initial burden is met by USADA in this matter, by filing the LNDD's Lab reports with the Panel, as evidence in this proceeding. Using that information, it may be concluded that the Athlete had a T/E ratio in excess of 4:1 and there was evidence of exogenous testosterone in his urine sample. Therefore, *prima facie* a doping infraction occurred and USADA has met its initial burden. Article 18 of the UCI Regulations provides that WADA-accredited laboratories *are presumed to have conducted Sample analysis and custodial procedures in accordance with the International Standard for Laboratory analysis* {ISL}.

151. Article 18 of the UCI Regulations provides that the Rider may rebut this ***presumption by showing that a departure from an international standard occurred.*** **The definition of an International Standard {IS} found within the ISL provides that compliance with the IS (<u>as opposed to another alternative standard, practice or procedure</u>) shall be sufficient to conclude that the procedures covered by it was performed properly. Article 18 goes on to provide that the Rider may only successfully rebut the presumption favouring the Lab by showing a deviation or departure from an IS. This is the only relevant evidence to determine if the Athlete's attempt to rebut the presumption of Article 18 may be successful. Proving some other procedure, practice or alternative standard is of no consequence in rebutting the presumption favouring the Lab.[14]**

152. In the event that the Rider rebuts successfully the presumption of Article 18, then it is the burden of USADA to establish that ***such departure did not cause the Adverse Analytical Finding*** **{AAF}. This could be an onerous requirement.**

153. In accordance with Article 16 of the UCI Regulations, USADA must establish that ***an anti-doping rule violation occurred to the comfortable satisfaction of the hearing body, bearing in mind the seriousness of the allegation which is made.*** **The standard of proof is** ***greater than a mere balance of probabilities but less than proof beyond a reasonable doubt*****. In rebutting the presumption that the analytical procedures were conducted in accordance with the ISL, the Respondent Athlete's burden of proof** ***shall be by a balance of probability*****.**

154. The purpose of the ISL is set out in Article 1. It is to ***ensure laboratory production of valid test results and evidentiary data and to achieve uniform and harmonized results and reporting from all accredited Doping Control Laboratories.*** **The ISL and the related ISs are central to the case put by the Respondent.**

155. The ISL provides in Article 1 that "once promulgated Technical Documents become part of the ***International Standard*** **for Laboratories". Indeed, the incorporation of the provisions of the Technical Documents into the Laboratory's quality management system is mandatory for WADA accreditation.**

156. The ISL provides in Article 5.1, ***Any aspect of testing or management not specifically discussed in this document*** **[the ISL]** ***shall be governed by ISO/IEC 17025 and, where applicable, by ISO 9001.*** **Therefore, violation of ISO 17025 can become a violation of the ISL.**

157. Therefore, violations of the ISO 17025 or of WADA Technical Documents can be violations of the ISL for purposes of rebutting the initial presumption favouring the Lab that an AAF has been established. However, that of itself does not mean that the AAF does not amount to an anti-doping rule violation. The Panel must

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[14] The foregoing analysis of the UCI Rules is consistent with that contained in UCI v. Landaluce & RFBC TAS 2006/A/1119 at paragraph 57.

weigh the evidence to determine if the violation affected the AAF. If that is the case then the anti-doping rule violation may not have been made out at law.

PART I: SCIENTIFIC ISSUES

(i) Identification of Testosterone & Epitestosterone in GC/MS Test

158. The Respondent alleges that the Lab did not properly identify testosterone and epitestosterone in the confirmation testing of the T/E ratio in the procedure using the GC/MS. The allegation is that there was a failure to comply with TD2003IDCR in the confirmation testing because the Lab analyzed only one diagnostic ion at m/z 432 in both the A and B confirmation T/E tests. It is also asserted that USADA introduced no evidence to meet its burden that the failure to comply with the Technical Document did not cause the AAF.

159. The T/E test has two phases: the screen phase and the confirmation phase. The Technical Document TD2004EAAS in Article 2 permits testing for an abnormal T/E ratio using a single aliquot and a single ion (m/z 432). The document suggests that the screening procedure normally be conducted on a single aliquot. The Lab did this as the chromatograms set out earlier in this award at pps. 23 and 24 indicate.

160. TD2004EAAS provides that the confirmation of an elevated T/E value *is to be performed in triplicate* and must be done in accordance with Technical Document TD2003IDCR, That document provides in the opening paragraph that: *The Laboratory must establish criteria for identification of a compound. Examples of acceptable criteria are:* and then it goes on to list various topics one of which is *Selected Ion Monitoring Mode.* Under that heading there is this requirement: *When selected ions are monitored, at least three diagnostic ions must be acquired.* The first and second confirmation chromatograms show the acquisition of a single diagnostic ion as was done for the screening phase; see the chromatograms at pps 24-27. What the Lab did contravenes the Technical Document. The Panel interprets the Technical Document 20031DCR not merely as an example when it speaks of three diagnostic ions but a requirement. The Technical Document requires greater precision and clarity for the Lab to be excused from doing three diagnostic ions for testosterone because the substance is naturally occurring in the body so the single ion can be used to identify it. If that is the case for testosterone then the Technical Document requires more precision on the point. Therefore, the failure to comply with the technical document leaves the Lab results as being non-compliant with the procedures required to declare an AAF for the T/E ratio.

161. The purpose of the Technical Document requiring the analysis of three diagnostic ions is to be certain that the measured substances are testosterone and epitestosterone. In monitoring at least three ions for the drug any laboratory should be able to verify that there are no interferences at those ions, which could potentially affect the quantification, abundance or size of the peaks. The

problem in monitoring only one ion is that there can be several compounds with 90 to 100% abundance. Dr. Goldberger testified that in the case of ion 432 (the ion monitored by LNDD) there are over ten compounds that have a 90 to 100% abundance of ion 432. Some of those compounds were not even steroid-related. Dr. Goldberger in his testimony indicated that the test result is unreliable as a consequence.

162. The foregoing discussion raises the issue as to whether the TD2003IDCR is a guide for identification criteria or whether it absolutely prevents the Lab from adopting other identification criteria or a legal standard. As was previously described, the identification criteria the Lab uses must be documented in order to obtain the ISO 17025 accreditation. That accreditation follows the principles that a Lab should do what they have written down; write down exactly what they do and that in this case the identification criteria are fit for the purpose for which they are to be used. The identification for T and E by the ISO 17025 accreditation is the way in which the Lab carried out the confirmation tests. Does that mean the Lab has complied with the TD2003IDCR because it holds the ISO 17025 accreditation?

163. The interplay of ISO17025 and Technical Documents is set out in Article 5.1 of the ISL. If an aspect of the testing is not specifically discussed in the ISL as expanded upon by the Technical Documents then the accreditation of ISO applies. Therefore, the Lab cannot reply to the alleged violation of TD2003IDCR by saying: "we have an ISO 17025 accreditation for what was done," when the Technical Document specifically indicates that identification criterion for confirmations requires at least three diagnostic ions.

164. LNDD did in fact acquire at least three ions, as evidenced by their exhibits and testified to by Dr. Goldberger, however, they failed to monitor those three ions in the further confirmation testing of the sample. The Panel understands through its expert that what should have occurred is the identification using three ions for the Testosterone and an indication that it is not possible to confirm the lower Epitestosterone because it is lower than the minimum limit. Indeed, TD2004EAAS under heading 2, *Specific requirements for GC/MS measurement of T/E value, concentration of testosterone, concentration of epitestosterone states:*

> ***. . . In the case of high T/E values, the concentration of epitestosterone is frequently low and it may not always be possible to measure epitestosterone precisely. In such cases only the concentration of testosterone (equivalent to glucuronide) is to be determined.***

165. Thus, the document contemplates the exact situation that occurred here. The Panel concludes therefore, that the better laboratory practise would have been to so report the E value. Nevertheless, the reporting of the T value was not in compliance with TD2003IDCR.

166. The Respondent also points out that during the T/E test LNDD identified

deuterated androsterone, a compound that should not have been present in this particular test. Deuterated androsterone does not appear naturally in human urine and is sometimes used as an internal standard. The Respondent therefore argues that this provides the Panel with further evidence that the T/E results as presented by the LNDD may be inaccurate.

167. The Panel finds that the Respondent has a legitimate concern in its submission in respect of deuterated androsterone. However, the Panel does not accept that this is evidence of inaccurate or sloppy work on behalf of the LNDD. The Lab detected the problem and discarded the results as a consequence. In order to do broad coverage of many substances in an "A" sample analysis, deuterated androsterone is used as a control and is deliberately added to the substance to be analyzed. In this particular case no deuterated androsterone was added as a control but the instrument generates numbers on the printout even if nothing has been added to the compound. The machine is automatically set up in such a way that it looks for deuterated androsterone in every sample, knowing the substance was not present in the sample (as it was not added to the sample), the lab analyst took out its identification. This occurrence is an indication of signal interference, but in no way affects the machine's ability to identify testosterone. What the machine produces in such a case is not relevant information and should be ignored. That was done in this case and was the proper way to conduct the analysis.

168. The Respondent also alleges that the B sample result for sample degradation was above the permitted 5% limit and as such, the result from the B sample cannot be used as corroborative evidence in the T/E ratio results. While the Panel has already rejected the T/E ratio in this case for reasons stated earlier there is an answer to the allegation of the Respondent.

169. Dr. Ayotte testified that microbial degradation of the sample will degrade the steroids, not form them. A true sign of degradation according to Dr. Ayotte would be the significant presence of steroids in the free fraction. Dr. Ayotte explained that what the Respondent alleged was that free epitestosterone detected was 0.44 nanograms which are more than 5% of the total epitestosterone. But the chromatogram which produced this result of 0.44 nanogram of epitestosterone doesn't have a peak for epitestosterone, it's just a "blurb", as such there was in fact no epitestosterone in the free fraction. Her conclusion was therefore that there was no evidence of sample degradation.

170. USADA submits that a review of the Respondent's T/E ratio and longitudinal steroid profile further corroborates the Respondent's Stage 17 AAF. Dr. Catlin testified that the Stage 17 spike in the Respondent's longitudinal steroid profile was not consistent with normal human physiology and was consistent with doping with testosterone. In light of the Panel's conclusion on the T/E issue, it is unnecessary to determine whether the longitudinal study corroborates the Stage 17 AAF for it is only required in the event that the T/E is to be used as an anti-doping rule violation which the Panel has held it is not to be used.

171. During the hearings both Dr. Catlin and the Respondent's expert Dr. Amory confirmed that the use of exogenous testosterone can increase an athlete's haemoglobin level. UCI conducts periodic blood testing on riders before races as a "health test". USADA sought discovery disclosure and was advised that Mr. Landis had no such documents. During cross-examination of the Athlete, the Respondent was shown correspondence between UCI and his personal doctor which made it clear that both the doctor and the Athlete had received such documents. The Respondent's doctor was present in the arbitration hearing room during the initial days of hearings but not when the Athlete was cross-examined. At the Panel's direction, the Respondent's UCI blood test results were made an exhibit to the case, but only on the second last day of hearings and thus, too late to be a proper part of this case. However, these events are illustrative of the point made at the outset of this award that the parties repeatedly failed to reach agreements which would have expedited this matter.

172. Regardless of whether the Lab identified Testosterone, the Panel concludes that the Lab failed to follow the prescribed procedures for Select Ion Monitoring, as outlined by WADA TD2003IDCR. In so finding, the Panel is not making a determination that the Respondent's T/E ratio was not elevated beyond the WADA threshold, but rather that the laboratory's procedure was not in accordance with our interpretation of WADA TD2003IDCR. Therefore, the Athlete rebutted the presumption in favour of the Lab that there has been compliance with the ISL. The burden is then that of the Applicant to show that such departure did not cause the AAF. The Panel finds that the shifting burden to the Applicant remains unsatisfied. Therefore, the Panel finds and declares that there can be no AAF declaration based on the T/E ratio aspect of the USADA charge. That charge is hereby dismissed.

173. The foregoing conclusion does not end this matter. As has been held in several cases,[15] even where the T/E ratio has been held to be unreliable because it was affected by bacterial degradation, a feature found by this Panel not to be the case in this matter, the IRMS analysis may still be applied. It has also been held that the IRMS analysis may stand alone as the basis of an exogenous testosterone AAF.[16] Therefore, this Panel must proceed to examine the IRMS aspects of this case.

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[15] See *Susin* v. *FINA* CAS 2000/A/274*; WADA* v. *Wium* CAS 2005/A/908.
[16] *UCI* v. *S, DCU &* DIE CAS 1998/A/192; *UCI* v. *Moller* CAS 1999/A/239; *IAAF* v. *Czech Athletic Federation and Z* CAS 2002/A/362; and, *UCI* v. *Bakker & KNWU* CAS 2005/A/936.

(ii) Identification of Testosterone Metabolites in the GC/C/IRMS Test

a. Departure from TD2003IDCR

174. As described above, the identification of the testosterone metabolites and the corresponding determination of their isotopic values is the result of two separate testing processes. The first is GC/MS which relies upon mass spectrometry to identify any specific compound. The WADA accredited laboratories use the T/E ratio produced by this process to screen for naturally occurring testosterone in a ratio that might require further investigation. The operating premise is that a T/E ratio of greater than 4:1 will trigger use of the second process.[17] That process is the GC/C/IRMS where the identification of any specific compound cannot be achieved and that compound is confirmed based solely on gas chromatographic data. As previously discussed the jurisprudence of USADA and also of the CAS have indicated that an arbitration panel is entitled to rely entirely on the IRMS analysis as an independent and sufficient basis for finding that an anti-doping rule violation has occurred with respect to the exogenous application of testosterone.

175. Counsel for the Athlete raised a number of arguments that could be considered to be departures from the technical documents or the manner in which an anti-doping laboratory ought to conduct itself. The experts for the Respondent suggested that: 1. retention times and relative retention times; 2. failed quality control; 3. negative controls - "blank urine'; 4. positive controls - Mix Cal Acetate ; 5. linearity; all contribute problems to the Lab identifying exogenous testosterone and do not permit the finding of an AAF.

1. Retention times or Relative Retention Times

176. It is the position of the Athlete that the retention time or relative retention times from the GC/MS test when compared to the retention time of the subsequent GC/C/IRMS test to identify the compound indicates a departure from the ISL.

177. The Respondent's expert Dr. Meier-Augenstein testified that he was unable to identify the relevant peaks in the IRMS chromatograms because of the differences in retention times and relative retention times between the GC/MS portion of the IRMS analysis and the GC/C/IRMS portion.

178. It should be recalled from the discussion of the CIR test by use of IRMS that the identification of the testosterone metabolites by GC/MS is not the same identification process through the use of the GC/MS instrument used to determine the T/E ratio and which the Panel rejected above in paragraph 172. The second part of the process in the CIR test is to use the GC/C/IRMS to

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[17] The Lab can move on to the IRMS test in other cases but usually only does so if there is suspicion or good reasons because the testing by IRMS costs as much as running the entire screening process for the "A" sample and takes two days.

determine the isotopic values of a peak.

179. WADA TD2003IDCR provides that

> ***For capillary gas chromatography, the retention time (RT) of the analyte shall not differ by more than one percent or +/- 0.2 minutes (whichever is smaller) from that of the same substance in a spiked urine sample, Reference Collection sample, or Reference Material analyzed contemporaneously.***

What the foregoing provision does is to ensure that the technician is calculating the isotopic values of the correct peak. The Technical Document requires that the retention time of the peaks from the GC/MS part of the CIR test process falls within specified time periods of each other: plus or minus .2 minutes or 1%, whichever is smaller. Without this requirement, there is no way to be certain that the peaks selected by the technician in the IRMS chromatographs are in fact the peaks that were previously identified as the target compounds (e.g. 5 Alpha, 5 Beta, Andro, Etiocholanolone ("Etio"), 11-ketoetio and Pdiol).

180. Dr. Meier-Augenstein calculated differences in retention times of up to 7.2% in comparing the retention times between the GC/MS instrument and the GC/C/IRMS instrument.

181. The retention time {"RT"} of a compound is the time that is measured by the instrument (whether GC/MS or GC/IRMS) for the compound to reach the detector. In this particular case, the GC/MS system measures the RT of the target analyte and the internal standard. The relative retention time ({"RRT"} is the ratio of the RT of the target analyte to the RT of the internal standard. For example, if the RT of the target analyte is 10 min and the RT of the internal standard is 5 min, then the RRT will be 2.

182. As required by TD2003IDCR, every time the RT of the target analyte is measured and the internal standard is measured it should be within 0.2 minutes as such the relative retention times should also be the same. However, it must be noted, that TD2003IDCR does not apply to RRTs between two different and separate instruments that are not of the same type. Therefore, Dr. Meier-Augenstein misdirected himself in his testimony before the Panel by comparing RRTs not between two GC/MS or two GC/C/IRMS instruments, but instead between one GC/MS and one GC/C/IRMS.

183. Dr. Brenna testified, that it cannot be expected that the RTs for a GC/MS instrument will correspond with the RTs for the GC/C/IRMS instrument.

184. Dr. Brenna explained that in the case of the MS, the GC is connected directly to the MS and it detects the substance almost instantaneously. The RTs from the MS therefore correspond essentially to the time that the analytes are emerging from the GC. This is not however, the case with the IRMS. The GC/IRMS as

elaborated upon by Dr. Brenna is an entirely different system than the GC/MS. With GC/C/IRMS, the sample is processed first through the GC, as with GC/MS. The times therefore at the end of the GC should be the same as with the MS, as long as the same instrument is being used, but after that there is no instantaneous detection of the retention time. After the sample passes through the GC portion of the GC/C/IRMS system there is an additional length of plumbing in the GC/C/IRMS machine adding a significant amount of time to the total RT of the substance. This additional "plumbing" is where the combustion of the substance is taking place. From the earlier discussion of how the instruments work, the reader may recall that combustion involves turning the compounds into CO2 so that the IRMS can measure the amount of carbon 13 and carbon 12 in the CO2.

185. The additional time added to the RT of the analyte or standard in the IRMS will always be a constant time, regardless of the individual substances or compounds being measured. Consequently, the retention times of the compounds emerging from the GC/MS system cannot be the same as those coming from the GC/C/IRMS. Likewise, the RRTs will also be different. Taking the example used above, if the RT from the GC/MS is 10 min for the target analyte and 5 min for the internal standard, in the case of IRMS, we may be adding an additional 1 minute for the combustion of those compounds to take place. The reason that the additional time is the same for each substance/compound is that the substance or compound is no longer in its original form; they have been combusted completely to form CO2. As such, the RT for the target analyte at the end of the IRMS would be 11 min and the RT for the internal standard is 6 min. This results in a RRT of 11/6. Arithmetically speaking it is not possible for the RTs and the RRTs to be identical in the GC/MS and GC/IRMS systems nor can it be ensured that it will be within TD2003IDCR.

186. Dr. Brenna's testimony specified that it could still be possible that the retention times might be proportional to one another (and within TD2003IDCR), but it won't always work out in that way. Instead, the lab compares the peaks and the sequence of the peaks from the GC/MS and GC/C/IRMS to identify the metabolites and the endogenous reference compounds. Specifically, to identify the substances in question, one would compare the pattern of peak heights and retention times in the GC/C/IRMS chromatograms, anchored by the internal standard with a known RT, with the pattern of peaks heights and RTs in the GC/MS chromatograms obtained from the same aliquot of the sample.

187. Furthermore, as Dr. Meier-Augenstein attested, the RTs measured for the GC/MS instrument and the GC/C/IRMS instrument separately are within the 1% criteria. There is no dispute on this point between the parties. Dr. Meier-Augenstein also conceded in his testimony that when you are dealing with two separate machines one would not compare retention times but did claim that one would use relative retention times.

"The moment you run on two different instruments, in order to have

comparison, to safeguard against such fluctuations that are beyond your control, this is why you use relative retention times."

188. The point must be conceded because the chromatographic conditions are different. The GC column is, of course, the same in both instruments. However, the thermal ramp {that is the variation of the temperature of the compartment containing the GC column as function of time} is different. That is evident from the fact that the total time for analysis is 25 minutes for GC/MS and 45 minutes for GC/C/IRMS. This difference in the experimental conditions would itself be enough to consider totally worthless a comparison of the retention times (or relative retention times) between GC/MS and GC/C/IRMS. Thus, the proposition of the Athlete as put by his scientific experts was unsound and without any reasonable scientific basis.

189. The Panel concludes that the Respondent's interpretation of TD2003IDCR is a complete misapplication of the document. The conclusions of the Respondent, based upon the evidence given by both Dr. Meier-Augenstein and Dr. Davis are scientifically totally unacceptable and fundamentally flawed. The Technical Document does not contemplate the comparison of retention times or relative retention time between two separate instruments. Therefore, the Respondent has failed to rebut the presumption that the LNDD departed from the ISL as outlined in WADA TD2003IDCR. This branch of the Respondent's case and argument is dismissed as a matter of the expert testimony and as a matter of the proper legal interpretation of the Technical Document.

2. Failed Quality Control

190. The Respondent alleges that LNDD's quality control methods were ineffective and in some cases deliberately manipulated so as to provide no assurance that the GC/C/IRMS instrument or the associated testing process were precise, accurate or reliable and that the ISL violations did not cause the alleged AAF.

191. The Lab procedure identified four quality control measures used in its GC/C/IRMS testing, (a.) internal standard 5 alpha-androstanol acetate (5-alpha AC); (b.) negative control "blank urine"; (c.) positive control "mix cal acetate"; and (d.) instrument performance check. Each of these four control measures is addressed separately below, coupled with a further argument of the Respondent with respect to the timing of the Mix Cal Acetate injection sequence.

a. Internal Standard – 5 alpha-androstanol acetate {"5-alpha AC"}

192. The Respondent contends that the 5-alpha AC provided no quality assurance because the Lab could not determine its isotopic value within the acceptable range of error in four instances during the testing of Sample 995474.

193. Control facets in a chemistry laboratory may be to two types. A substance may

be added to the sample aliquot at the outset of the procedure. This is an internal standard to be assured that everything is working as it is supposed to be. If the internal standard is not found it indicates something has gone wrong. The 5-alpha AC is not such a standard. It is added to the Mix Cal Acetate as well as to every Sample Fraction and Blank Urine Fraction in a known isotopic quantity following the wet chemistry or in other words mid process. The theoretic delta value of 5-alpha AC is -30.46. The Lab, therefore, should identify 5 Alpha AC at that delta value within their measurement of error of ± .5 delta units. The issue was introduced through the cross-examination of Dr. Brenna.

194. In two of the 8 runs with respect to the Athlete's Sample "A" the delta value measured of the 5-alpha AC was not within the ± .5 delta units measurement of error. Similarly, in two of the 8 runs with respect to the Athlete's Sample "B" the delta values were not within the measurement of error.

195. The testimony of Cynthia Mongongu pointed out that the purpose of this internal standard was to establish a relative retention time to assist in peak identification. The purpose was not to serve as a control for peak delta value measurement, but rather to serve as a peak identification control. Dr. Ayotte testified that her laboratory also uses 5-alpha AC as an internal standard for purposes of peak identification and is not used for any delta value measurement purpose. In argument the Respondent does not point to any provision in the ISL that would require the Lab to use the 5-alpha AC internal standards for delta value measurement purposes.

196. The testimony of the technician and the expert establish that the 5-alpha AC is added not at the start of the entire procedure but just before the stage in the procedure when the wet chemistry is over and the chromatographic stage is about to commence. It is added to each fraction to create a chromatographic standard which seems to have unfortunately been mislabelled in the proceedings as an internal standard when in fact it is a chromatographic reference standard. According to (LNDD 0460) when the delta unit measurement of uncertainty is used as an acceptance criteria for a control, only 3 of the 4 compounds in the control must fall within that measurement of uncertainty. However, that acceptance criterion does not apply to the single compound 5-alpha AC when it is used as a chromatographic reference standard.

197. The 5-alpha AC was added after the extraction stage. Its purpose is to monitor the quality of the chromatograms, not to monitor the delta value measurement and as such its purpose is solely as a chromatographic reference standard.

198. The sole purpose of the 5-alpha AC as a chromatographic reference standard is to determine its retention time so that it may be used to calculate the relative retention times for the compounds of interest.

199. The variation in the 5-alpha AC, as testified to by Ms. Mongongu is caused as a result of matrix interference that is often found at the beginning of a

chromatogram.

200. Dr. Schänzer testified that he calculated the standard variation to be .65 per mil and that he considered this variation to be "very well acceptable." He explained that the variation is a little bit bigger than other steroids because it is always eluted very early in the chromatogram and also more influenced by the biological background. He further stated that in his laboratory he would expect to obtain similar variations to those found at LNDD. Dr. Schänzer further testified that variations in the measured delta values for the 5-alpha AC internal standard would not cause him to disregard the other delta values determined for the Respondent's sample. It was Ms. Mongongu's unequivocal testimony that the variation would have no effect whatsoever on the validity or reliability of the IRMS test.

201. The Panel finds that the difference in delta values for the 5-alpha AC chromatographic reference standard fails to rebut the presumption that the Lab departed from the ISL. Indeed, no particular provision of any Technical Document provides for the requirements being argued by the Respondent. Therefore, it is found by the Panel that the Respondent has not rebutted the presumption found in Article 18 of the UCI Regulations. Furthermore, the argument is rejected and does not support the Respondent's overall argument that the LNDD's quality control methods were ineffective and the testing inaccurate. It is also important to note that the maximum variation between any of the measurement for the 5-alpha AC chromatographic reference standard and the established reference value is 1.18 delta units. This means, even if you assume, and this is not the case, that the same variability applies also to the delta values of pregnandiol and 5-alpha androstandiol, which are measured in the same fraction (Fraction 3) the variation of 1.18 delta units, would have not been enough for the Respondent's sample to have tested negative under the WADA criteria. Consequently, even in the event that the Respondent had rebutted the presumption found in Article 18 the Claimant has demonstrated that despite this presumed departure for purposes of this analysis, the difference in delta values for the 5-alpha AC did not cause the AAF. Therefore, the Claimant would have answered the presumed departure. However, this latter analysis is merely an alternative to the fundamental reason for rejecting the argument of the Respondent as not having rebutted the presumption.

b. Negative Control – "Blank Urine"

202. The Respondent also argues that the Sample Blank Urine did not provide effective quality control assurance.

203. The Respondent submitted that when the Blank Urine Samples were reprocessed on May 4-5, 2007, the "B" Sample 5-alpha AC when measured with automatic subtraction went from -1.6 delta-delta to -3.45 delta-delta and the "A" sample went from -1.59 delta-delta to -3.65 delta-delta. The Respondent therefore argues that the delta-delta variance between manual processing and automatic

processing are too great (more than 2 per mil difference) to provide any assurance that the blank urine provided effective quality control.

204. Dr. Brenna testified however that these results would not have caused him any concern.

205. The Panel accepts the testimony of Dr. Brenna and notes that these inconsistent results are not related to the 5 alpha-androstandiol data re-processing figures which are the compound for which the LNDD's AAF was declared. No violation of an ISL procedure is established which might rebut the presumption that the analysis was conducted in accordance with the ISL. The Panel does not accept the submission of the Respondent that the LNDD's quality control methods were ineffective and the testing inaccurate based on the submission regarding blank urine samples.

c. Positive Control – Mix Cal Acetate

206. The Respondent further alleges that Mix Cal Acetate is "neither a positive control nor an effective quality control." The evidence presented on behalf of the Respondent is that in order to effectively serve as a quality control, the Mix Cal Acetate would also have to contain the three key target analytes 5 Alpha, Pdiol and Andro. The Respondent further proposed that Mix Cal Acetate was a "clean matrix" and as such it could not serve as an effective quality control measure.

207. The purpose of the positive control in this case is to calibrate the system to ensure that it is properly detecting the delta values of a substance. As such a substance is added to the positive control in a known amount, the system is run and then it is determined whether the delta value measured by the instrument corresponds to the amount that is known to have been added.

208. The Respondent contends that because there are no unidentified substances in the Mix Cal Acetate to create the type of interference that is routinely seen in sample chromatograms, it cannot possibly be a control substance. It was testified to by Dr. Meier-Augenstein that urine, which is a more complex or "dirty" matrix would have been a more appropriate control.

209. The evidence of Dr. Ayotte however, is that the Mix Cal Acetate is a good positive control because the delta values in that solution have been certified by a lab, and the bracket ranges of values found in normal human urine samples and samples coming from the administration of a prohibited steroid.

210. Testosterone is an endogenous substance. One cannot have a "dirty" matrix as suggested by Dr. Meier-Augenstein as a positive control because one does not know the value of the testosterone naturally in the urine through the human body processes. The target steroids in this instance would already be present in any urine sample. Accordingly, once a delta value was obtained for the target

substance it could not be determined if it was entirely attributable to the addition of the solution, as some of the delta value measured would be an unknown amount already naturally present in the urine.

211. The situation of a "dirty" matrix therefore can only work effectively as a positive control when detecting an exogenous substance. Testosterone is not such a substance.

212. Aside from the foregoing evidentiary point, there is no document produced by WADA that requires the use of a positive control in a urine matrix. Furthermore, the LNDD's methods have been approved by ISO auditors and they are ISO 17025 accredited. There is no satisfactory evidence that refutes the presumption by Article 18 of the UCI Regulations that the Lab is presumed to have conducted the Sample analysis in accordance with the ISL. In the absence of such evidence the presumption is not rebutted. There is nothing to indicate that LNDD has a deficient positive control system.

213. It is the conclusion of this Panel therefore that the Mix Cal Acetate in this instance is an effective positive control and the LNDD has not departed from the ISL on this matter. The Respondent has failed to rebut their presumption.

d. Instrument Performance Check

214. The fourth and final quality control step the Respondent alleges was ineffective was the Lab's Instrument Performance Check. In order to remain accredited by WADA and ensure quality control, Laboratories are required to routinely perform instrument checks. These instrument checks provide additional assurance that the instruments are working within their range of acceptable performance, which should be documented by the Lab.

215. The Respondent made three claims with respect to linearity. First, that LNDD did not measure linearity on a monthly basis as required by its SOP. Secondly, that LNDD did not measure linearity over the full range of peak intensities found in the Respondent's sample; and lastly, that by the Respondent's expert's rough calculation, LNDD's linearity results were outside of a specification which the Respondent's expert downloaded from the instrument manufacturer's website.

216. Linearity is described as the ability of the IRMS instrument to accurately quantify the isotopic ratio of the individual testosterone metabolites and endogenous reference compound in different samples, regardless of their concentration. As submitted by both parties, linearity is more easily described as the ability of the IRMS instrument to accurately measure isotopic ratios across samples which often vary in concentration over different runs.

i. MONTHLY CHECK

217. According to the Lab's standard operating procedure {"SOP"}, linearity is supposed to be checked on a monthly basis. However, the Respondent submitted and the Claimant admitted that this was not done on a monthly basis.

218. Accordingly, the Respondent has rebutted the presumption that the Lab failed to adhere to the ISL in failing to check the linearity of the IRMS instrument on a monthly basis as provided for in its ISO 17025 accreditation. It is now for the Claimant to demonstrate that this departure did not cause the AAF.

219. Linearity of the IRMS instrument was checked on 26 June 2006, 31 July 2006 and 25 September 2006. The IRMS analysis of the Respondent's "A" and "B" samples was conducted on 23 July 2006 and 4 August 2006, respectively. The results of these checks, which in each of the "A" and "B" samples was within a 30 day period preceding the processing of the particular sample which indicated that the instrument was linear.

ii. DID NOT MEASURE OVER FULL RANGE OF PEAK INTENSITIES

220. The Respondent contends that the intensity of the 5 alpha diol peak from the Respondent's sample was smaller than the smallest intensity measure by LNDD during linearity testing. This conclusion was reached by looking at the peak areas. Dr. Meier-Augenstein testified that linearity is measured using peak area. However it was the testimony of Dr. Brenna that linearity for IRMS analysis is done measuring peak height or signal intensity. The Claimant further pointed out that the IsoPrime Users Manual refers to the measurement of linearity in terms of peak height.

iii. OUT OF MEASUREMENT OF LINEARITY

221. Dr. Simon Davis testified that the instrument checks performed by the LNDD demonstrated that the IRMS instruments were not linear. It was stated that the IRMS instrument "*drifted in and out of linearity, and … there was also a degree of uncertainty as to how unlinear it was, because they* [LNDD] *did NOT do the tests properly over the full range.*"

222. He further confirmed that linearity, according to a last-minute document produced by the Respondent, on the IsoPrime instrument must be "equal or less of .3" to be within specification as set by the manufacturer. However, as noted by the Claimant, this information was obtained at the close of 9 days of hearing, the Respondent provided no advance notice of its use of this exhibit, additionally the 0.3 per mil specification related to a newer IsoPrime instrument and did not make reference to the actual instrumentation used by the Lab. The evidence is not sufficiently credible to upset the standard established by the SOP where the maximum allowed value is 0.7 per mil and not 0.3 per mil. Therefore, the Panel

finds that the Lab was not operating outside of its SOP regardless of what the instrument specifications from the manufacturer for a different version of the instrument might say.

223. Dr. Brenna testified that in his opinion the machine was linear and that none of the variation in the linearity data would have made any difference in the delta/delta values reported. In particular, Dr. Brenna testified that the results of the Stage 17 analysis were not affected by any linearity problem. He further elaborated that linearity is not a problem at lower levels of peak intensity and that linearity would not be a factor when comparing the delta values of two peaks which are close to the same intensity as is the case with the Stage 17 peaks for 5 alpha diol and pdiol.

224. The Panel finds that while the instrument was checked within the 30 days prior to conducting both the "A" and the "B" sample analysis, it was not done in full compliance with the SOP because the checks were not at regular 30 day intervals when one check is on June 26 and the next one is on July 31st. The SOPs are part of the ISO 17025 accreditation. The linearity point is not discussed in the ISL and therefore, a violation of the ISO 17025 can become a violation of the ISL. The Respondent has identified therefore, a breach of the accreditation process which amounts to a rebuttal of the presumption of the Article 18 of the UCI Regulations.

225. In light of the above, the Panel concludes that the Claimant has proven on the balance of probabilities as required by Article 18 of the UCI Regulations that while the linearity was not in accordance with the ISL that the departure from the ISL did not cause the AAF. As evidence the Panel points to the fact that the instrument linearity was checked within a month of the IRMS testing of both the Respondent's "A" and "B" samples and the fact that the EDF when run on a new instrument also confirmed the AAF. Furthermore, the Panel finds that the accepted method for measuring linearity is peak height as provided for in the IsoPrime Users' Manual and not peak area. As such the Respondent must fail on this argument. Finally, the Panel concludes that the instrument was linear and takes particular note of Dr. Brenna's testimony in stating that had there been a linearity problem with LNDD's instrument on the day the "A" sample was analyzed the problem would have been reflected in the control results and Dr. Meier-Augenstein's testimony acknowledging that the Mix Cal Acetate controls established that the instrument was operating perfectly well. It simply does not follow that the machine would work perfectly well with the control and then fail to do so with the Respondent's Sample. Accordingly, the Respondent cannot succeed on this last and final point regarding linearity.

e. Timing of Injection Sequences

226. In a separate and unrelated to the foregoing four part argument, an argument regarding failed quality control was presented by the Respondent. It is asserted that the quality controls used by the Lab were not run immediately before and

immediately after the testing of the Respondent's "A" and "B" samples.

227. **The Respondent first points out there was a delay of approximately 5 hours and 14 minutes between the running of the Sample A F2 fraction and the running of the Mix Cal Acetate. Furthermore, there was a delay of 4 hours and 40 minutes between the injection of the first Mix Cal Acetate control and the beginning of the injection of the 3 fractions containing blank urine and the Respondent's "B" sample. The Respondent contends that IRMS testing requires the running of the Mix Cal Acetate and other quality control runs in sequence and without manual interruption.**

228. **It was testified to by Ms. Frelat that one of the delays between injections on the Respondent's "B" sample was due to the fact that the preparation of the Respondent's sample for analysis had not been completed. Ms. Frelat's testimony can be confirmed by LNDD's documentation package. Furthermore, in relation to the "B" sample, the Respondent's expert Dr. deBoer was present during the "B" Sample analysis and no objection was raised by him at that time.**

229. **The Panel finds that although there was a delay in between the injection of the Mix Cal Acetate and the Respondent's sample fractions, this does not amount to a departure from the ISL. As confirmed in the testimony of Dr. Ayotte, the ISL does not require that samples be run through automatically or consecutively without delay. Nor was evidence presented to this Panel demonstrating that this gap in time would result in inaccurate results. The Respondent has not provided this Panel with any evidence indicating the requirement in either the ISL or LNDD's SOP that each step in the injection sequence be performed consecutively or without delay. The Panel therefore accepts the submissions of the Claimant on this point and finds that there was no failure on the part of the Lab to ensure effective quality control.**

230. **The Panel does note that there was no explanation regarding the delay between injection of the Mix Cal Acetate and the Respondent's Sample "A" fraction, but this does not amount to a departure from the ISL and as such the Respondent has failed to rebut the presumption.**

231. **In summation regarding the Respondent's overall argument of the Lab's failed quality control, the Panel finds on all counts but one, that the Respondent has not succeeded in rebutting the presumption that the LNDD departed from the ISL as both a matter of fact and of law. Article 18 of the UCI Regulations extends the benefit of a presumption to the Lab that its analysis is in accordance with the ISL unless the Athlete can show some departure from it. In the one area where the presumption is rebutted the Claimant has satisfied its burden that the failure to comply with the linearity standard did not cause the AAF. Therefore, the Panel dismisses the arguments of the Respondent in relation to heading 2. "Failed Quality Control".**

(iii) Poor Chromatography

232. The Respondent submits that good chromatography is critical to accurate analytical results. It is alleged that the Lab violated ISL 5.4.4.2.1. by failing to properly generate chromatograms that avoided interference in the detection of the prohibited substance or its metabolites and markers by components of the sample matrix. In support of this proposition but, independent of it, the submission is that the poor chromatography has a direct effect on the accurate, or inaccurate, determination of isotopic values (for the IRMS test) and quantification of testosterone, epitestosterone and the T/E ratio. The latter submission on the T/E ratio need not be analyzed here because the Panel has dismissed the charge on the T/E ratio for other reasons.

233. ISL 5.4.4.2.1. states,

> ***Confirmation methods for Non-threshold Substances must be validated. Examples of factors relevant to determining if the method is fit for the purpose are: Matrix interferences. The method should avoid interference in the detection of Prohibited Substances or their Metabolites or Markers by components of the Sample Matrix***

***a. IRMS Chromatography*:**

234. The testimony of Dr. Meier-Augenstein provided that the chromatograms for Fraction 3 of both Samples "A" and "B" were so poor that they resulted in inaccurate and unreliable IRMS results.

235. Dr. Davis submitted that the IRMS chromatograms were poor and resulted in inaccurate and unreliable results. However, his testimony related to the chromatograms associated with the additional samples tested using the "B" specimen for Stages 11, 15, 19 and 20 of the race. Those chromatograms arise from the testing of additional samples and while they may corroborate the evidence found in the "A" and "B" samples related to the alleged anti-doping rule violation their quality of itself could not impinge the chromatograms of the samples upon which the rule violation was alleged. Consequently, they do not amount to evidence indicating that the IRMS test results for Stage 17 were inaccurate or unreliable. Furthermore, those chromatograms were from a different LNDD instrument using MassLynx software instead of OS2 software. Dr. Davis did not express an opinion on the quality of any of the Respondent's Stage 17 sample chromatograms.

236. It is only on the testimony of Dr. Meier-Augenstein that the Panel could determine the chromatograms from Stage 17 were unreliable and this Panel notes that Dr. Meier-Augenstein's testimony was frequently contradicted by other experts. Of particular note, is the testimony of Dr. Brenna challenging the testimony of Dr. Meier-Augenstein that if there was overlap between the minor peak and 5 alpha peak, the first peak (minor peak) would become more enriched

(higher $^{13}C/^{12}C$ delta value) and the second peak (5 alpha) would become more depleted (a lower $^{13}C/^{12}C$ delta value). Dr. Meier-Augenstein in fact was mistaken in this assumption and as demonstrated by Dr. Brenna, if there had been an overlap between the minor peak and the 5 alpha peak, the effect would have been to make the 5 alpha peak $^{13}C/^{12}C$ enriched, meaning a less negative delta value. Consequently, the overlap actually aided the Respondent and gave a smaller difference between the 5 alpha diol and the Pdiol then had there been no overlap.

237. Dr. Goldberger also provided evidence regarding the quality of LNDD's chromatograms. He testified that the GC/MS chromatograms for the Sample A confirmation and Sample B confirmation were poor. Specifically he went so far as to describe the B confirmation chromatography as "horrible." The Respondent further points out that the Claimant never addresses these allegations by Dr. Goldberger. The Claimant instead chose to focus on the GC/C/IRMS chromatograms for the Respondent's Stage 17 Sample analysis. Considering the Panel's conclusion regarding the reliability of the T/E results, it is redundant to consider the chromatography of same.

238. Dr. Ayotte, Dr. Brenna, Dr. Schänzer, Dr. Catlin and Dr. Shackleton were unanimous in their testimonies, that the Stage 17 chromatograms provide a reliable basis for the Lab to find an AAF.

239. The experts for the Respondent were working in a laboratory for scientific research in the case of Dr. Meier-Augenstein and a laboratory doing work for criminal prosecutions in DUI and DUI/drug cases. According to the testimony of the Respondent's experts, the standards in such labs appear to be of a higher and more rigorous basis than those of the WADA accredited labs. Such facilities also do not have the benefit of the presumption found in Article 18 of the UCI Regulations to the effect that they are presumed to have conducted the sample analysis in accordance with the ISL and other WADA documentation. The anti-doping laboratories have a shelter from the standards of other types of labs in the form of this presumption. It may be that as a consequence some more relaxed procedures are acceptable. That is not a matter for this Panel to consider but for the WADA to contemplate. Is too much leniency being extended by the presumption? We leave that question for others to answer for it is beyond our jurisdiction and scope in this arbitration proceeding.

240. While the Panel acknowledges that it may be ideal to have "perfect chromatography" where there is absolutely no matrix interference and no co-eluting peaks, or sloping baselines it is also mindful of the fact that this is not always possible, particularly when dealing with human samples obtained in less than ideal circumstances. The LNDD's chromatography was according to the experts called by the Claimant good to very good. Although it perhaps could have been better it remains "fit for the purpose" and unquestionably indicates the presence of exogenous testosterone in the Respondent's "A" and "B" samples. In applying the language of the ISL what is required is that the

"method <u>should</u> avoid interference." The language is not mandatory. Had the drafters intended that matrix interference be avoided it would require wording such as "shall" or "must". For this Panel to accept the submissions of the Respondent that matrix interference must be avoided would be a misconstruction of ISL 5.4.4.2.1. Dr. Ayotte confirms this statement in noting that a laboratory does not violate Article 5.4.4.2.1 of the ISL just because it produces a chromatogram that contains matrix interference. Therefore, even where matrix interference has occurred in the Stage 17 chromatograms it would not amount to a violation of the ISL. It may be a violation of the standards used by a purely scientific research lab or one that does criminal analytical work; however, the Rules are very direct on this point in stating that only a deviation or departure from the ISL is relevant. Therefore, evidence of scientific or criminal labs and their standards and practises is of no consequence in rebutting the presumption favouring an anti-doping Lab.

241. The Panel also recognizes that in this particular instance it is dealing with chromatograms for an endogenous substance, as opposed to an exogenous one. As such, the ability to achieve chromatograms without matrix interference or co-eluting peaks is significantly impeded. Both testosterone and epitestosterone are naturally occurring in the body, so to completely separate them from other naturally occurring substances in the body is difficult and not always possible. We are not dealing with a compound completely foreign to the human body and therefore, cannot be expected to produce a better chromatogram than the same results that would be achieved when attempting to detect a purely exogenous substance.

242. The Respondent has failed to rebut the presumption that the LNDD's chromatography departed from the ISL.

(iv) Manual Processing

243. The Respondent posits that the LNDD failed to comply with ISL 5.4.4.4.1.4 and 5.2.6.1 when it manually processed the Respondent's samples during the IRMS testing.

5.2.6.1 of the ISL provides,

> ***The Laboratory must have documented procedures to ensure that it maintains coordinated records related to each Sample analyzed. In the case of an Adverse Analytical Finding, the record must include the data necessary to support the conclusions reported (as set forth in the Technical Document, Laboratory Documentation Packages) In general, the record should be such that in the absence of the analyst, another competent analyst could evaluate what tests had been performed and interpret the data.***

5.4.4.4.1.4 of the ISL provides,

> ***All data entry, recording of reporting processes and all changes to reported data shall be recorded with an audit trail. This shall include the date and time, the information that was changed, and the individual performing the task.***

244. Manual processing is the process by which the lab technicians manually adjust the start and end points of the peaks, and added and deleted background points in chromatograms. The elimination of these peaks and end points is considered necessary to increase the reliability and accuracy of the results from the chromatograms.

245. It is the position of the Respondent that the Lab violated 5.4.4.4.1.4 by failing to record at any point the calculations or data entry associated with the samples in question.

246. Dr. Ayotte and Ms. Mongongu both testified that Article 5.4.4.4.1.4 applies only to changes to reported data, whether in paper or electronic format. Dr. Ayotte continued that when the technicians at LNDD or Montreal manually integrate the baselines and peak start-stops on chromatograms, that is part of the data analysis process; it is not a change to already reported data, which requires a forensic correction audit trail.

247. As indicated by both parties in this matter, this is the first time that electronic data files have ever been produced in a doping case. In consideration of this it is reasonable to assume that it is unlikely that LNDD would contemplate that they should electronically preserve every part of the baselines and peak start-stops established by manual integration.

248. Furthermore, it should be noted that LNDD kept physical copies of all their data which is proof enough of the steps taken during manual integration. These printouts were included in the documentation packages provided in this case to support the AAF results.

249. As further evidence to demonstrate the violation of the ISL, the Respondent argues that the LNDD was unable to reproduce its original results using "manual processing" even though the same technician working on the same machine tried more than 20 times to do so in attempting to re-run the electronic data files under the supervision of the Panel's expert Dr. Botrè.

250. The electronic data files were re-processed using 4 different methods. The first was using the original method employed by LNDD, involving manual integration by LNDD technicians of the baselines and peak start-stops, the other 3 methods were done at the request of Dr. Davis using the OS2 automatic integration feature without manual integration; with the OS2 automatic baseline subtraction feature turned off and no manual integration and finally using the newer MassLynx software.

251. **The Panel does not find this evidence convincing. The fact is that the results with the new software, as far as the difference of the delta values between 5-alpha androstandiol and pregnandiol is concerned, all gave positive results, both for the "A" and for the "B" sample; in fact sometimes those results were even more consistent with exogenous use of testosterone than the original ones. If the reader refers back to page 44 of this decision the charts of the electronic data file results are reproduced thereon. In reviewing these results it can be seen that in all 4 methods of reproduction, the difference between the 5 alpha androstandiol metabolite and the pregnandiol endogenous reference compound (indicated as "5A-P" in the charts) always met the WADA positivity criteria of delta/delta value of -3 or higher for an AAF. The agreement between the original and reprocessed data was consistent apart from two delta values. The Claimant explained that this difference was as a result of the delta value differences for andro-11 keto and etio-11 keto which were considerably smaller in re-processing than they were in the original analysis.**

252. **The Respondent argues that because the results obtained by the LNDD technicians in the re-processing were not identical to the original results they cannot be deemed reliable. However, it can be noted that with the exception of the 2 delta values mentioned above, the results are at or within LNDD's stated measure of uncertainty.**

253. **Accordingly, the Panel rules that the Respondent has failed to demonstrate that the LNDD departed from the ISL and concludes that the re-processing of the electronic data files is consistent with the determination that the Respondent was doping.**

(v) Deletion of Data

254. **The Respondent also submits that LNDD failed to comply with ISL 5.4.4.4.1.4 and 5.2.6.1 by failing to properly record data with an audit trail and failing to have documented procedures to ensure a coordinated record related to each analyzed sample in deleting data during the testing of the Respondent's "A" and "B" samples.**

255. **It was submitted by the Respondent that the LNDD technicians deleted test results they found to be "incorrect" or that "did not correspond." Particularly, the Respondent alleges that the Lab deleted test results related to the quality control steps including the result from the Mix Cal Acetate and Blank Urine runs. The Respondent further asserts that the LNDD manipulated the destruction and deletion of data such that the total picture presented by the Lab made the testing and IRMS sequences look as if they were uninterrupted.**

256. **This evidence was apparently introduced to suggest that there was a conspiracy within the Lab to ensure that the samples of Floyd Landis would be found positive. The difficulty with the theory of conspiracy is that the Lab was**

conducting the analysis of the Stage 17 sample without knowing on whose sample they were working.

257. The Panel rejects the theory of a Lab conspiracy as being without foundation and facts to come to such a conclusion.

PART II: NON-SCIENTIFIC ISSUES

258. Aside from the Scientific Issues discussed in Part I, the Respondent alleges there were several fatal errors committed by the Lab in relation to non-scientific issues which should lead this Panel to conclude that the LNDD did not act in accordance with the ISL. The Respondent alleges first that the LNDD failed to comply with the requirements for Chain of Custody and secondly that the Lab departed from the standards in relation to Laboratory Errors made by it, specifically in relation to non-forensic corrections made to the lab documents.

259. The Respondent also puts forward other arguments which may not in and of themselves rebut the presumption made in favour of the Lab in accordance with the UCI Rules, but could help strengthen the position of the Respondent that the results of the testing of the Respondent's sample should be discounted. These arguments would perhaps best be described as corroborative evidence.

(i) Chain of Custody

260. The Respondent contends that the Internal Chain of Custody {"COC"} within the lab was "fatally flawed" in that the Lab failed to comply with ISL 3.2 and WADA TD2003LCOC.

261. There are several relevant passages when it comes to the requirements placed on WADA accredited labs in terms of their Internal Chain of Custody. For ease of reference they are reproduced below. The WADA ISL 3.2 defines Laboratory Internal Chain of Custody as,

> ***Documentation of the sequence of Persons in possession of the Sample and any portions of the Sample taken for Testing. [Comment: Laboratory Internal Chain of Custody is generally documented by a written record of the date, location, action taken, and the individual performing an action with a Sample or Aliquot.]***

5.2.2.2 of same requires that,

> ***The Laboratory shall have Laboratory Internal Chain of Custody procedures to maintain control of and accountability for* Samples *from receipt through final disposition of the* Samples. *The procedures must incorporate the concepts presented in the WADA Technical Document for Laboratory Internal Chain of Custody (Annex C).***

WADA TD2003LCOC states.

> ***The Laboratory Internal Chain of Custody is documentation (worksheets, logbooks, forms, etc.) that records the movement of* Samples *and* Sample *Aliquots during analysis.***
>
> **…**
>
> ***Within the Laboratory, the Laboratory Internal Chain of Custody shall be a continuous record of individuals in possession of the samples or* Sample *Aliquots. When not in an individual's possession, it should be documented that the Sample or Aliquot is within a controlled zone (Ref. International Standards for Laboratories 5.4.3.2). The Sample or Aliquot must be in an individual's possession when in an uncontrolled or unsecured area of the laboratory . . .***

According to ISL 5.4.3.2.2 a controlled zone is an area to which access by visitors is monitored and records are maintained of access by visitors. Only authorized persons may have access to controlled zones. The testimony of Ms. Mongongu that the entire technical portion of the Lab where sample bottles are stored and IRMS preparation and analysis takes place is a locked, controlled zone where access is monitored and records are maintained of access by visitors who are not permitted without an escort. There is no doubt that LNDD meets the requirements for a controlled zone.

262. The Respondent asserts that the ISL and the Technical Documents require that all intra-laboratory transfers be documented and that an "impeccable chain of custody is necessary". The Respondent, therefore, argues that the failure to record both the transferor and the transferee to the transfer is fatal to USADA's position that there is no break in the chain of custody. The Respondent maintains that this practice or perhaps "non-practice" on the part of the LNDD requires the Panel to assume that the person previously listed on the summary report is the transferor from whom the bottle was transferred. It is submitted that this is not a topic about which an assumption can be or should be made.

263. The Respondent also points out in its submissions, several allegations regarding "*break in the intra-laboratory transfers of the Sample A and Sample B bottles and aliquots*." In support of both of these arguments the Respondent would have the Panel look to the LNDD's summary reports regarding COC, which can be found at Exhibit 24, USADA0253-0254.

264. The document the Respondent uses to bolster its argument regarding gaps in the COC is merely a "summary report". This document is not the original COC documentation. It might be better described as the Table of Contents to the Internal Chain of Custody within the Lab. This is evidenced by the fact that there are no initials beside the report and it is not written by hand. It is clearly a document that was created post-testing by the Lab as a road map to their COC during the testing procedure. In order to determine who took what when, one

would use the summary report as a reference to go back and check the original documents provided by the Lab. The Panel has reviewed and checked the original documents as provided in the Lab pack for the "A" and "B" samples. As a result of that review it was recognized that the detail regarding the sample was less complete than in respect of aliquots taken from the sample. The Panel is satisfied as a result of its review that it can trace the location of the sample and can determine at all times the operator in possession of an aliquot of the sample and what analytical chemistry procedure was being performed by that operator. The methodology used does not make this task an easy one but it can be accomplished and both the Panel and its expert are satisfied that the sample and aliquots can be accounted for at all times when the original documents are examined. The Panel would recommend to the Lab that it examine ways in which the COC may be more easily recorded and reviewed.

265. There is a discrepancy between the laboratory documentation and the testimony of Cynthia Mongongu with respect to the intra-laboratory transfer of the "A" bottle to Esther Cerpolini at 11h25 on 22 July 2006. In respect of the testimony of individuals named in the COC the Technical Document 2003LCOC states:

> ***The chain of custody along with relevant testimony from individuals documented on the chain of custody documents should provide a complete record of the Sample or Aliquot location.***

266. Although there is an incongruity between the relevant testimony of Ms. Mongongu and the chain of custody documents, the Panel's interpretation of the quoted technical document is that while testimony may augment the COC it can not destroy the effect of a properly documented COC. The Panel has found the Lab documentation to be satisfactory and does not have to have regard to the evidence of Ms. Mongongu and its inherent discrepancy. When testimony is called on the COC its purpose is to augment the COC where there are gaps in the internal chain of custody. The Panel does not find that there were any gaps in the Laboratory's chain of custody documentation requiring augmentation by *viva voce* testimony. The location of the Sample "A" bottle was known to be in "Salle 104" at the time referred to by Ms. Mongongu. Furthermore, the Sample "A" bottle was documented to be in a controlled zone at this time in accordance with TD 2003LCOC. The Panel therefore disregards the evidence of Ms. Mongongu on this topic. The Panel notes that her recollection would be almost 10 months after the fact and given that there was some confusion in the translation going on between English and the French language in which she testified there seems to be some uncertainty that she really understood what was being asked of her in this portion of her testimony.

267. Even if one has regard to the testimony of Ms. Mongongu so as to conclude that in fact the bottle was given to Esther Cerpolini at 11h25 and there was no documentation of this transfer; then, the Panel notes that there is no requirement in the WADA documents to record the transfer. The Technical Document 2003LCOC states,

> ***Within the <u>Laboratory . . . When not in an individual's possession, it should be documented that the Sample or Aliquot is within a controlled zone (Ref International Standard for Laboratories 5.4.3.2). The</u> Sample or Aliquot must be in an individual's possession when in an uncontrolled or unsecured area of the laboratory. The entry in the Laboratory Internal Chain of Custody should be completed at the time that any change in possession occurs.***

The sample was never during the relevant times in an uncontrolled or unsecured area of the laboratory. Therefore, the sample does not need to be in an individual's possession. Ms. Mongongu was working at the time in the controlled area of the laboratory. Secondly, there is no actual requirement that within a controlled zone of the Lab that a transfer of possession must be noted that requirement arises only in the uncontrolled zone. The actual language of the document is not obligatory. The word "should" would have to be replaced by mandatory language such as "shall" or "must" had the drafts person intended this to be an obligatory requirement. The transfer from one person to the other within the controlled zone of the Lab does not have to be recorded. Although, such recording of the information might make it easier to follow the Lab COC. Therefore, on the supposition set out at the outset of this paragraph there is no violation of the applicable Technical Documents. In any event, the Panel notes that on its review of the COC it can determine the location of the Sample as being in Salle 103 followed by Salle 104 and then re-stocked in the fridge.

268. There is a further reason for arriving at the same conclusion. If it were to be found, and this Panel is not so finding, that there was a technical breach of the COC, then the presumption benefiting the Lab is lost. However, the fact that the "B" sample confirms the existence of testosterone means that the technical breach of the COC with respect to the "A" sample did not cause or contribute to the AAF. Therefore, the technical breach ought not to have any legal consequence.

269. During the testing of the "B" sample, the Respondent's expert Dr. Douwe de Boer was present. At no point during his observation did he raise an issue as to inappropriate chain of custody procedures in regard to the "B" sample; nor did he make such a statement in his final evaluation report. Dr. de Boer writes in his signed statement that,

> ***The impression of the expert regarding the analytical performance of the B-sample analysis was that the LNDD worked in a transparent and professional way and according to transparent and professional procedures.***

270. There was no statement by Dr. de Boer to the effect that the LNDD's COC was fatally flawed. Indeed, it would seem that it was to the opposite effect.

Furthermore, the testing of the "B" sample confirmed the analysis of the "A" sample, implying that whatever loss of COC occurred had no effect on the analytical chemistry. Finally, there was no objection made during the time of the additional testing of the other seven "B" samples. The argument of a fatally flawed chain of custody is rejected.

271. The applicable ISL and Technical Documents do not require that the COC be a record kept on one continuous document. Although the Panel acknowledges that it may be more efficient and easier to follow if the COC were one continuous record of the location of the Sample bottle and aliquots, it finds that this is not a requirement of the WADA Code and consequently it cannot be a violation.

272. The evidence of Dr. Bruce Goldberger, expert witness for the Respondent, is that the COC starts when a specimen is collected and ends when the specimen is disposed of. He further elaborated that proper COC should include "*all transfers, aliquoting, movement of the specimen from the site of collection to the laboratory. It includes all steps. Any time that specimen is handled by a human, it should be recorded.*"

273. It must be noted however, that Dr. Goldberger is the director of a forensic toxicology laboratory at the University of Florida. Dr. Goldberger's lab is not a WADA accredited laboratory and Dr. Goldberger testified that the transfer of a bottle from one individual to another should be documented; he was not able to point to a document produced by WADA requiring transfer documentation. The Panel agrees with Dr. Goldberger that this may be a better practise and notes that it is the practise followed by both the WADA accredited Labs in UCLA and Montreal. However, the proper interpretation of the WADA Technical Documents does not lead the Panel to conclude that such an approach to naming the transferor and transferee is required under the Technical Documents. Under Article 18 of the UCI the Respondent has the burden to rebut the presumption in favour of the Lab Regulations *by showing that a departure from an international standard occurred.* The definition of international standard found within the ISL document provides that compliance with the ILS (<u>as opposed to another alternative standard, practice or procedure</u>) shall be sufficient to conclude that the procedures covered by it were performed properly. It is the finding of the Panel here that the COC was in compliance. Article 18 goes on to provide that the Rider may only successfully rebut the presumption favouring the Lab by showing a deviation or departure from the ISL. What the Respondent has established here is that there may be a better standard and a higher standard imposed upon laboratories that are not WADA accredited laboratories or self-imposed by WADA Laboratories. The proof of some other procedure, alternative standard or a better practise engaged in by other laboratories is of no consequence in rebutting the presumption because it is not a requirement of WADA accredited laboratories. Whether or not it is good practice to document these transfers is irrelevant to the laboratory's adherence to the ISL in this case. Therefore, the Panel finds there is no breach

of the Internal Chain of Custody as that concept is defined and applied in the WADA Technical Documents.

274. **As further evidence in support of its argument regarding COC, the Respondent put forward an article published by Catlin, Cowan, Donike et al. where at page 15 it is written, "*Laboratories are advised to review carefully the documents which describe the authority to test and the details of the client's protocol.*" In this particular instance the protocol to which the LNDD is required to adhere is WADA TD2003LCOC.**

275. **The evidence of Dr. Ayotte is that according to the Technical Document, COC can be composed of documents, records and testimony. Furthermore Dr. Ayotte stated that COC does not have to be tracked on one form and that documentation of transfers is less important than who had possession of the sample or aliquot. Indeed TD2003LCOC states, "*A Laboratory Internal Chain of Custody does not require a separate form.*"**

276. **The Panel takes notice of the wording of 5.2.2.2 of the ISL and that in accordance with that provision, WADA accredited laboratories are to create their own COC procedures and they must "*incorporate the concepts presented in the WADA Technical Document for Laboratory Internal Chain of Custody.*"**

277. **Although LNDD's COC documentation and procedure differs from that of other Laboratories, it is not inconsistent with the ISL requirements. It should also be noted that no laboratories are identical in their COC procedures. Each laboratory documents and records COC in a different fashion. Perhaps greater harmonization is desirable but that will require more standardization of the ISL document than is currently the case.**

278. **The Panel therefore concludes that what is important, as Dr. Ayotte testified, is that the "purpose" of the Technical Document is met and that there isn't one particular manner in which to meet that purpose. The LNDD's COC procedures comply with the "*concepts presented*" in WADA TD2003LCOC.**

279. **For all of the foregoing reasons, the Panel rejects the Respondent's arguments that the COC is fatally flawed. There are no facts to support the allegation on a factual basis. The application of the Technical Documents to the actual COC documentation of the Lab does not support the argument of the Respondent. This ground of objection to the Lab analysis is rejected by the Panel.**

(ii) Errors in Preparation of Laboratory Documents

280. **Although the requirement regarding forensic corrections is part of the TD2003LCOC, it is addressed separately because the Panel believes it is a different point with respect to the appropriate procedures regarding the handling of the Samples at LNDD.**

281. WADA TD2003LCOC requires that,

> ***Any forensic corrections that need to be made to the document should be done with a single line through and the change should be initialled and dated by the individual making the change. No white out or erasure that obliterates the original entry is acceptable.***

282. The testimony reveals that a forensic correction is a term used to deal with correcting mistakes on a laboratory document. In particular, if a mistake is made on a document, this error must be crossed out, initialled and corrected. There should be no obliterations or use of whiteout. The purpose for these forensic corrections is so that it can be read in the future.

283. At Exhibit 24, USADA0200 there are several improper corrections made to the laboratory documents including improper crossing out, missing dates and initials when crossing out occurred. There is another error at Exhibit 24 USADA 0008 where the wrong sample number is written down. In total, the Respondent alleges that the LNDD has committed 39 different errors within the lab documentation package. For the sake of expediency the Panel will not refer to each individual error.

284. Dr. Goldberger the director of a forensic toxicology laboratory and the current president of the American Academy of Forensic Sciences in his testimony indicated that the pattern of mistakes in the data packages concerns him. It was his opinion that he would as a result not trust the reliability of the report and test results in this case.

285. In light of the above, the Panel concludes that the LNDD's non-forensic changes are not in accordance with the ISL and WADA Technical Document and a departure has been established. The Respondent has therefore rebutted the presumption in favour of the Lab found in Article 18 of the UCI Regulations. Under the same Article it is now for the Claimant to establish that the departure did not cause the AAF.

286. In a situation such as this, it would suffice to show that at all times the LNDD was handling and testing the Respondent's sample and that the documents presented are the documents with respect to his specimen.

287. In response to the submissions of the Respondent on this matter, the Claimant acknowledges there are some improper corrections or notations but there remains no difficulty in demonstrating that the corrections were appropriate and did not cause the Respondent's AAF.

288. Firstly, the Claimant notes that the correct sample number was identified each and every time the Respondent's sample was placed on an instrument for analysis. Although there was a transposition error at USADA 0008, there is no doubt that the sample being tested was that of the Respondent. Furthermore, in

relation to sample numbers 995676 and 995475, the LNDD provided the report forms for the real Samples and confirmed that both samples were reported as negative.

289. The Panel therefore finds that the Claimant has established that the departures from the ISL and WADA Technical Document requirements did not cause the AAF. Moreover, the errors in lab documentation to which the Respondent points are regarding the GC/MS test. As the Panel has dismissed the results regarding the T/E ratio test it is not necessary to examine the arguments in connection with this line of reasoning or continue to elaborate on whether or not the Claimant has demonstrated that it did not cause the AAF.

290. The Panel does, however note that the forensic corrections of the Lab reflect sloppy practice on its part. If such practises continue it may well be that in the future an error like this could result in the dismissal of an AAF finding by the Lab.

(iii) Did the Respondent's comment to Greg LeMond amount to an admission of doping?

291. The Claimant called Mr. Greg LeMond (hereafter "LeMond") as a witness. Both he and the Respondent testified about a conversation between them that took place on 6 August 2006 that lasted approximately 36 minutes. USADA asserts that this testimony regarding a call between the Respondent and LeMond, together with subsequent threats against his person by both the Respondent and Will Geoghegan, employed by the Respondent as his business manager, constitute sufficient evidence to conclude that the Respondent admitted to LeMond that he engaged in doping. It is further submitted that the threats the night before LeMond testified were designed to intimidate him and prevent him from discussing the alleged admission made by the Respondent. The Panel eventually discharged LeMond as a witness when he refused to answer the questions put in cross-examination by counsel for the Respondent. The Panel finds that the only portion of LeMond's testimony that is relevant in this hearing is whether or not the Respondent's conversation with him amounted to an admission that he had been doping in the Tour de France.

292. It was LeMond's position that the Respondent confessed to him during the conversation. LeMond related a very personal story to him about sexual abuse in his youth and how it had lingered in his mind and suggested similar feelings would emerge if indeed the Respondent had been doping. He testified that he told the Respondent to come clean if he was in fact guilty of doping and encouraged him to come clean and change the sport. LeMond testified that in response to this the Respondent said "What good would it do? If I did it would destroy a lot of my friends and hurt a lot of people."

293. The Respondent testified that he did in fact call LeMond, but stated that during that call he did not admit to having used testosterone. He testified that he told

LeMond he "didn't do it" and that "it wouldn't make any sense" to admit to something he didn't do and that if he did admit to something he didn't do, he would like to know what the "positive outcome of it would be."

294. It is the position of the Claimant that this statement by the Respondent was tantamount to a confession. Having listened carefully to the testimony and weighing the other evidence, the Panel concludes that it would be a mischaracterization of the conversation to determine that the evidence amounted to an admission. To find these statements were a confession on the part of the Respondent would be putting more than words in the Respondent's mouth, it would be reading something into his statement far beyond what any reasonable interpretation could or should be in the circumstances.

295. The Panel is in no way making a determination regarding the credibility of Mr. LeMond's testimony for his cross-examination was inchoate when he was dismissed by the Panel as a witness for refusing to answer questions ruled to have been proper cross-examination. The Panel does accept the statement and explanation of Mr. Landis. It places a characterisation on the conversation that it cannot amount to an admission. Therefore, the Panel concludes that the Respondent's comment to Mr. LeMond did not amount to an admission of guilt or doping. The facts here can be easily distinguished from those in *USADA* v. *Montgomery* CAS 2004/O/645.

(iv) Joe Papp

296. The Claimant called Joseph Papp (hereafter "Papp") as a witness in its case in Chief. Papp's testimony related to the use of testosterone in the sport of cycling. This testimony was elicited despite the fact that it is not the burden of USADA to prove that the use of testosterone would benefit a cyclist. However, the testimony is directed at a general but vague defense of the Respondent that the single use of testosterone would not benefit a cyclist, particularly at Stage 17 of the race.

297. Mr. Papp testified that he used testosterone as a recovery agent during part of his career as a cyclist. He testified that he believed testosterone would aid his cycling as did many others in the sport. In particular Papp elaborated that he did not use testosterone to build muscles but instead used it to improve his recovery in competition, thereby improving his overall performance. He further described the method by which he administered testosterone. He explained that one would rub the testosterone gel on the chest or abdomen and that within 30 minutes one would experience an increase in their serum testosterone level and if you were deficient in serum testosterone because of the day's exertion or cumulative exertion from competition it would return you back to your normal baseline level. Mr. Papp in his testimony also admitted to doping with other substances from the Prohibited List. He testified that his own personal experience led him to believe that testosterone had "beneficial effect, during a stage race". The reason being that cycling is a stage race and it is not

necessarily won by the rider who starts out the fastest or is the most powerful, but rather it is won by the person who can recover the best.

298. The Respondent would have the Panel discount entirely the evidence of Mr. Papp for 3 three reasons:

1. **Mr. Papp took many performance enhancing drugs, and it is impossible to know which, if any, had the positive effects he described during his examination;**

2. **Mr. Papp's cycling career and experiences differ so substantially from Mr. Landis' career and experiences that no parallels can be drawn between them; and**

3. **Mr. Papp's credibility is negatively affected by the unknown deals that he appears to have made with USADA.**

299. This case centres around one thing and one thing only. Did the Respondent test positive for Testosterone and if so, can it be established to the appropriate standard of proof that he was in fact guilty of doping? Although the Panel does not agree with the Respondent's reasons for discounting Papp's testimony, the Panel does not find that his testimony was helpful in determining the issues before it that it must decide. Therefore, the Panel will have no regard to the Papp testimony in determining the case before it.

(v) Errors in USADA's Briefs and Discovery Responses

300. The Respondent asserts that many of USADA's representations in its pre-hearing briefs and discovery responses were proven false by the evidence at the arbitration hearing. It was submitted that the errors in USADA's Briefs and Discovery Responses should give the Panel no assurance in the positions taken by USADA during the arbitration hearing especially in their view when these positions were supported by baseless conclusions.

301. Firstly, the Respondent contends that as described earlier in this decision that the Claimant distorted the timing in which the IRMS test results were run.

302. The Respondent has demonstrated that these runs were completed with significant gaps between them. Nevertheless, the fact is that these errors or misrepresentations did not cause the AAF. They are relied upon by the Respondent to create a vague allegation of a conspiracy to manipulate the results. The Panel finds no evidence to establish any conspiracy theory on the part of the Respondent and determines that the Claimant responded adequately to this error in what it had stated.

303. The Respondent points to USADA and the Lab and asserts they have no understanding of the indicator light on the control unit for the pump on the

IRMS instrument panel. They assert that such misinformation as stating that a green light is displayed on the IsoPrime instrument and that the light will change colours if the Penning pressure of the machine rises too high give no assurance about the Lab's ability to operate its IRMS instrument properly. Dr. Davis testified that this green light was merely a power light and that it was completely unrelated to Penning pressure and that it does not change colour. The Respondent makes a similar assertion in relation to the lifting rings on the new IsoPrime2 instrument the Lab received. The Panel notes these allegations do not directly impact the matters under consideration and can not be said to affect the AAF. Therefore, the Panel has decided to disregard this evidence as being insufficiently probative of any inferences that might be drawn from the evidence to support the case made by the Respondent.

304. The Panel does not need to take account and makes no comment upon the allegations of the Respondent that USADA's prior representations were contradicted by both parties witnesses regarding the documenting of the location of sample bottle.

305. The Respondent also argues that several of USADA's discovery responses were later proven to be incorrect. This is an aspect of this case that troubles the Panel. However, the Panel notes that there was problematic behaviour on the part of both parties which is reflective of their lack of agreement and co-operation in a manner which would have expedited this proceeding. See opening paragraph #1. Therefore, the Panel is not at the end of the case going to go back and revisit the conduct of either party or their counsel in some sort of retroactive renunciation of conduct. Suffice to say, the matters raised were not alleged to affect the fairness of the proceeding and have no other relevance to the Panel. They are just part of the litigation war games the parties counsel engaged in between themselves.

(vi) LNDD's Laboratory Errors – Cumulative Effect?

306. In addition to the ISL violations discussed in the Scientific portion of this award, the Respondent alleges that the number of errors committed by the LNDD technicians should give the panel no assurance in the reliability or accuracy of the test results. Specifically the Respondent points to, (1) the various errors committed by the LNDD technicians, (2) the failure of the LNDD technicians to understand the critical hardware and software and (3) other indicators that LNDD technicians lack of competence in the IRMS equipment and in its operation.

307. As acknowledged by the Respondent these alleged errors do not directly implicate a specific ISL, WADA Technical Document or ISO. However, the Respondent contends that they are nevertheless, evidence of inexperience, incompetence and lack of training.

308. It was the conclusion of Dr. Davis after observing LNDD technicians Claire

Frelat and Cynthia Mongongu that neither of them understood the IsoPrime1 or IsoPrime2 instruments, nor were they understanding of the software used to accompany these instruments.

309. The Respondent also argues that the lack of a training program for the operation of the IRMS instruments, the fact that LNDD had no manual for its IsoPrime instrument, the misunderstanding regarding the instrument's indicator light, the Lab's failure to remove the lifting rings on its IsoPrime2 instrument before operation further corroborates the assertion that the Lab's results are not accurate or reliable.

310. In reference to the lack of a manual for the IsoPrime instrument, the Respondent points specifically to the Penning pressure of the instrument. The documentation states that the pressure for the molecular pump should remain below a level of 5E minus 6 millibars. During the "A" sample analysis, the Penning pressure read 5.2 X 10^{-6} millibars, which is slightly above the documentation's reference threshold level. Dr. Davis testified that the operation of the instrument above the threshold pressure can produce unreliable results. However, Dr. Brenna's testified that had there been a pressure problem then the Mix Cal acetate results would have indicated such a problem and they did not. Furthermore, there is the fact that on re-analysis using the IsoPrime 2 instrument the results are confirmed with on the whole higher values than with the equipment alleged to be incompetently operated.

311. In response to these assertions the Panel finds that the practises of the Lab in training its employees appears to lack the vigor the Panel would expect in the circumstances given the enormous consequences to athletes of an AAF. Furthermore, the other matters introduced in evidence and referred to in this section do give some cause for concern. Nevertheless, like other parts of the evidence in this matter there are no ISL Rule violations that might result in the Panel accepting the Respondent's allegations as affecting the AAF in this case.

(vii) Credibility of Witnesses

312. The Respondent has repeatedly alleged that the testimony of USADA's expert witnesses who were affiliated with WADA-accredited anti-doping laboratories cannot be found credible as there is an inherent conflict between taking an oath to tell the truth and the requirements of the WADA Code of Ethics, Sections 3.3 and 3.4.

313. Specifically, the relevant portions of these sections state,

3.3 Clinical or Forensic:

> ***…The Laboratory should not engage in testing or expert testimony that would call into question the integrity of the individual or the scientific validity of work performed in the anti-doping program.***

3.4 Other Testing:

...The Laboratory should not provide testing services in defense of an Athlete in a Doping Control adjudication.

314. The Respondent contends that this is in effect a "Code of Silence" and requires witnesses to either refuse to answer questions or answer questions in a dishonest manner.

315. The Panel disagrees with the assertions of the Respondent and does not agree with their characterisation of the WADA documents. The WADA Code of Ethics is enacted to enable WADA to maintain a neutral position from that of the Athlete. If WADA personnel were allowed to testify on behalf of Athletes this would have a significant impact on its ability to maintain solidarity and remain an "impartial tester" of Samples.

316. The Code of Ethics in no way prevents the Laboratories from giving truthful testimony in cases. In fact Dr. Catlin testified that had he come to a conclusion that in this particular instance it wasn't a positive finding he would have nothing to do with the case. Dr. Catlin further stated that he has in fact testified although on behalf of USADA, to the detriment of a WADA accredited lab. Dr. Ayotte also testified that if she was given a documentation package that showed any problems that could have altered the lab decision she would get involved and would find a way to inform the responsible testing authority of that problem.

317. To assume that lab directors would lie when being questioned under oath is a dangerous assumption to make. In fact, it should be noted that the Laboratory Code of Ethics directly prohibits perjury. Specifically, point 4 of Annex B - Laboratory Code of Ethics states,

The Laboratory personnel shall not engage in conduct or activities that undermine or are detrimental to the anti-doping program of WADA, an International Federation, a National Anti-Doping Organization, a National Olympic Committee, a Major Event Organization Committee, or the International Olympic Committee. Such conduct could include, but is not limited to, conviction for fraud, embezzlement, <u>perjury</u>, etc. that would cast doubt on the integrity of the anti-doping program **[emphasis added].**

318. This Panel will in no way undermine the credibility of these individuals who have clearly demonstrated commitment and dedication to their work.

319. Where we have found witnesses testimony to be lacking in credibility we have indicated our views in this award. Otherwise we make no findings of lack of credibility of witnesses whatsoever and reject the submissions of the Respondent in this regard.

320. THIS PANEL, after having carefully read, reviewed and considered all of the evidence and arguments presented by the Claimant the United States Anti-Doping Agency on the one hand, and the evidence and arguments of the Respondent, Floyd Landis, on the other hand including, but not limited to, the pre-trial briefs and arguments, the pre-trial motions and related arguments and rulings, the testimony of the witnesses, with exhibits, the opening and closing statements of counsel introduced during the arbitration hearing held from May 14-23, 2007 and the Proposed Findings of Fact and Conclusions of Law filed by both parties on the 28 June 2007, hereby makes the following rulings and awards in the case of USADA v. Landis:

1. **The charge of an elevated T/E ratio from the sample was not established in accordance with the WADA International Standard for Laboratories and is hereby dismissed.**
2. **The charge of exogenous testosterone being found in the sample by the Carbon Isotope Ratio analysis is established in accordance with the UCI Anti-Doping Regulations.**
3. **An Anti-Doping Rule Violation is found to have been established under Article 15.1. This is the Athlete's first violation.**
4. **Pursuant to UCI Article 261 a period of two years' ineligibility is imposed by this award.**
5. **The violation of the UCI Rules having occurred as a result of an In-Competition test will result under UCI Articles 256 and 257.2 in the automatic disqualification of the Athlete's results in the 2006 Tour de France and forfeiture of any medals, points or prizes.**
6. **Under UCI Rules 257.2 and 275 the normal period of Ineligibility would commence with the date of this decision, but the Rule also provides that where any period during which provisional measures were imposed or voluntarily accepted by the athlete shall be credited against the total period of Ineligibility to be served. Furthermore, where required by fairness, the hearing body imposing the sanction may start the period of Ineligibility at an earlier date commencing as early as the date of the anti-doping violation. In this case the Athlete filed a declaration of voluntary non competition as of 30 January 2007. Therefore, the period of Ineligibility will begin on that date and continue until 29 January 2009.**
7. **The submission that the Athlete voluntarily accepted a suspension at an earlier date the 5th of August 2006 being the day on which he was fired by his cycling team is rejected.**
8. **The Panel makes no order as to costs.**

9. DATED this 20th DAY of SEPTEMBER 2007.

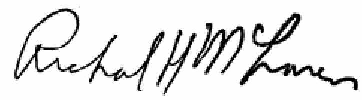
For the Panel



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Patrice Brunet, Attorney at Law.
Chairman



IN ______________________________

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Prof. Richard H. McLaren, C.Arb., Barrister

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Christopher L. Campbell, Attorney at Law